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GOVERNMENT OF INDIA

MINISTRY OF RAILWAYS

(RAILWAY BOARD)

Report by the Railway Board

ON

INDIAN RAILWAYS

FOR

1952-3

Volume I

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PRINCIPAL STATISTICS OF RAILWAY OPERATIONS

I.—All Indian Railways

Items		1948-9	1949-50	1950-1	1951-2	1952-3
Capital at charge	(crores) Rs	775·88	813·07	838·18	*861·57	868·52
Route mileage as on 31 March		33,860·85	34,022·29	34,078·94	34,119·44	34,274·98
Gross earnings	(crores) Rs	234·12	258·32	264·62	294·14	272·31†
Total Working expenses	(crores) Rs	184·06	207·23	214·39	227·58	219·93†
Operating ratio	per cent	78·62	80·17	81·02	77·37	80·77
Number of passengers originating	(millions)	1,184·51	1,255·26	1,307·79	*1,232·10	1,184·41
Passenger miles	(millions)	38,817·19	40,019·72	41,671·74	*39,550·77	36,035·63
Earnings from carriage of passengers	(crores) Rs	93·11	95·25	99·22	111·42	101·87
Average earnings per passenger mile	Pies	4·60	4·57	4·57	5·41	5·43
Freight tons originating	(millions)	82·67	91·58	92·34	*97·87	98·36
Freight ton miles	(millions)	22,750·42	25,464·68	27,007·52	29,017·66	28,960·89
Earnings from carriage of goods	(crores) Rs	112·34	135·69	139·77	153·95	143·80†
Average earnings per freight ton mile	Pies	9·48	10·2	9·94	10·2	11·2
Total train miles	(millions)	167·55	179·42	185·11	*191·50	195·33
Gross earnings per train mile	Rs	13·97	14·68	14·57	15·57	14·13†
Working expenses per train mile	Rs	10·99	11·78	11·79	12·03	11·40†
Net earnings per train mile	Rs	2·98	2·90	2·78	3·54	2·73†
Net earnings per mean mile worked	Rs	14,647	14,973	14,515	*19,260	15,267†

* Revised figures.

† Exclusive of the freight charges on carriage of railway stores, fuel, etc., which do not enter into financial accounts with effect from 1 April 1952.

II.—Indian Government Railways†

Items		1948-9	1949-50	1950-1‡	1951-2	1952-3
Capital at charge	(crores) Rs	703·12	727·18	803·82	830·53	833·06
Route mileage as on 31 March		26,422·40	27,172·10	33,302·84	33,343·34	33,518·98
Gross earnings	(crores) Rs	214·77	238·32	262·57	291·85	270·09§
Total Working expenses	(crores) Rs	169·63	192·89	212·67	225·76	218·16§
Operating ratio	(per cent)	78·98	80·94	81·00	77·36	80·77
Number of passengers originating	(millions)	1,061·35	1,138·47	1,279·36	1,203·73	1,156·87
Passenger miles	(millions)	35,128·66	36,322·30	41,159·38	39,030·20	35,536·21
Earnings from carriage of passengers.	(crores) Rs	83·91	86·04	97·83	109·88	100·38
Average earnings per passenger mile	Pies	4·59	4·55	4·56	5·41	5·42
Freight tons originating	(millions)	74·42	83·44	91·38	96·66	97·12
Freight ton miles	(millions)	21,639·83	24,207·86	26,962·51	28,965·87	28,905·78
Earnings from carriage of goods	(crores) Rs	104·18	126·67	139·26	153·32	143·19§
Average earnings per freight ton mile	Pies	9·24	10·0	9·90	10·1	11·1
Total train miles	(millions)	150·05	161·27	182·01	*188·92	192·53
Gross earnings per train mile	Rs	14·31	14·78	14·67	5·67	14·20§
Working expenses per train mile	Rs	11·30	11·96	11·86	12·11	11·50§
Net earnings per train mile	Rs	3·01	2·82	2·80	3·56	2·75§
Net earnings per mean mile worked	Rs	16,933	16,618	14,748	19,562	15,475§

* Revised figures.

† Include statistics of lines worked by Indian Government Railways but exclude Indian Government portions worked during 1948-9 and 1949-50 by the Nizam's State and Saurashtra railways.

‡ Include figures for Bikaner State, Jodhpur, Mysore State, Nizam's State, Saurashtra, Jaipur State, Rajasthan, Dholpur State, Scindia State and Cutch State Railways, which have been taken over by the Central Government as a result of the Federal Financial Integration from 1 April 1950.

§ Exclusive of the freight charges on carriage of railway stores, fuel, etc., which do not enter into financial accounts with effect from 1 April 1952.

INTRODUCTORY NOTE

1. The Railway Board's annual report on Indian Railways is prepared for the financial year, *i.e.*, from 1 April of one year to 31 March of the year following.

Volume I is a narrative report dealing with the various aspects of railway working, such as, general administration, financial results, improvements in, and additions to, rolling-stock, commercial and operating methods, recruiting, training and welfare of staff, and facilities provided for the convenience of the travelling public.

Volume II contains financial and statistical summaries and statements covering the main heads of capital and revenue accounts and all other aspects of railway working.

2. The regrouping of Government Railways has been completed during the year under report on 14 April 1952 with the formation of the Northern, Eastern and North-Eastern Railways as follows:

The Northern Railway by the integration of the former Jodhpur, Bikaner State, and Eastern Punjab Railways, Lucknow, Moradabad and Allahabad Divisions of the East Indian Railway; and the Delhi-Rewari-Fazilka Section of the Western Railway.

The Eastern Railway by the integration of the former Bengal Nagpur Railway with the remaining Divisions of the East Indian Railway.

The North Eastern Railway by the integration of the former Oudh-Tirhut and Assam Railways and the Kanpur-Achnera Section of the Western Railway.

The comparative statistics for both the years 1951-2 and 1952-3 have been given in the Report as far as possible but wherever it has not been possible to give the data on a comparable basis, the statistics have been given for the constituent units, namely the *ex*-Bikaner, Jodhpur, E.P., E.I., B. N., Assam, O.T. and Western Railways with explanations in footnotes to the different statements.

3. An important change in accounting procedure has been introduced with effect from 1 April 1952 on Government Railways by the abandonment of the apportionment of through traffic earnings and elimination from financial accounts the inter-departmental and inter-railway adjustments on account of manufacture, repairs and overhaul of rolling-stock in workshops of one railway for another and of the freight charges on carriage of railway stores including fuel, by rail. Allowance should be made for these changes in comparing the statistics of gross earnings, working expenses and the derived statistics of Government Railways since 1 April 1952 with those for the preceding years. The earnings and expenses of individual railways are also affected by this change and the mode of presentation of the financial statistics has accordingly had to be changed in both volumes of this report.

4. Further, after the Federal Financial integration and the regrouping of railways into six zonal systems under the Government management, the other railways represent only a small group accounting as on 31 March 1953 for 756 miles (N. G.) For statistical purposes, therefore, the Indian Railways have now been classified as follows instead of Class I, II and III as hitherto:—

(i) Government Railways, and
(ii) Non-Government Railways.

The details of the railways falling under each category are shown in Appendix D of this volume.

5. For the information of those not conversant with the value of Indian currency and the units thereof, the following details are given:—

(*a*) One *lakh* equals one hundred thousand;
(*b*) One *crore* equals one hundred lakhs or ten millions;
(*c*) One *anna* equals 1/16th of a rupee;
(*d*) One *pie* equals 1/12th of an anna.

The approximate value in English coinage of a rupee at the present rate of exchange is one shilling and six pence.

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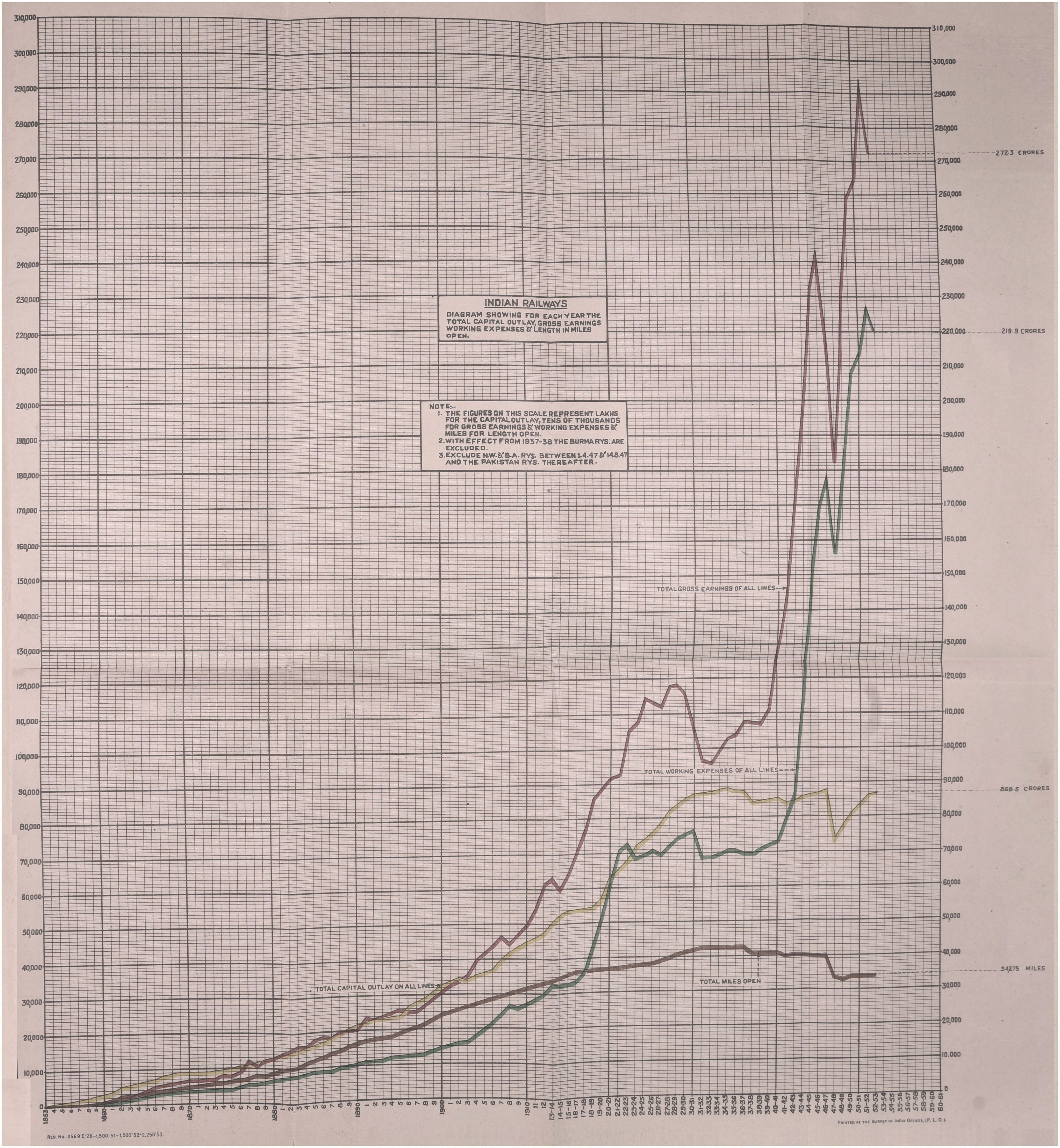

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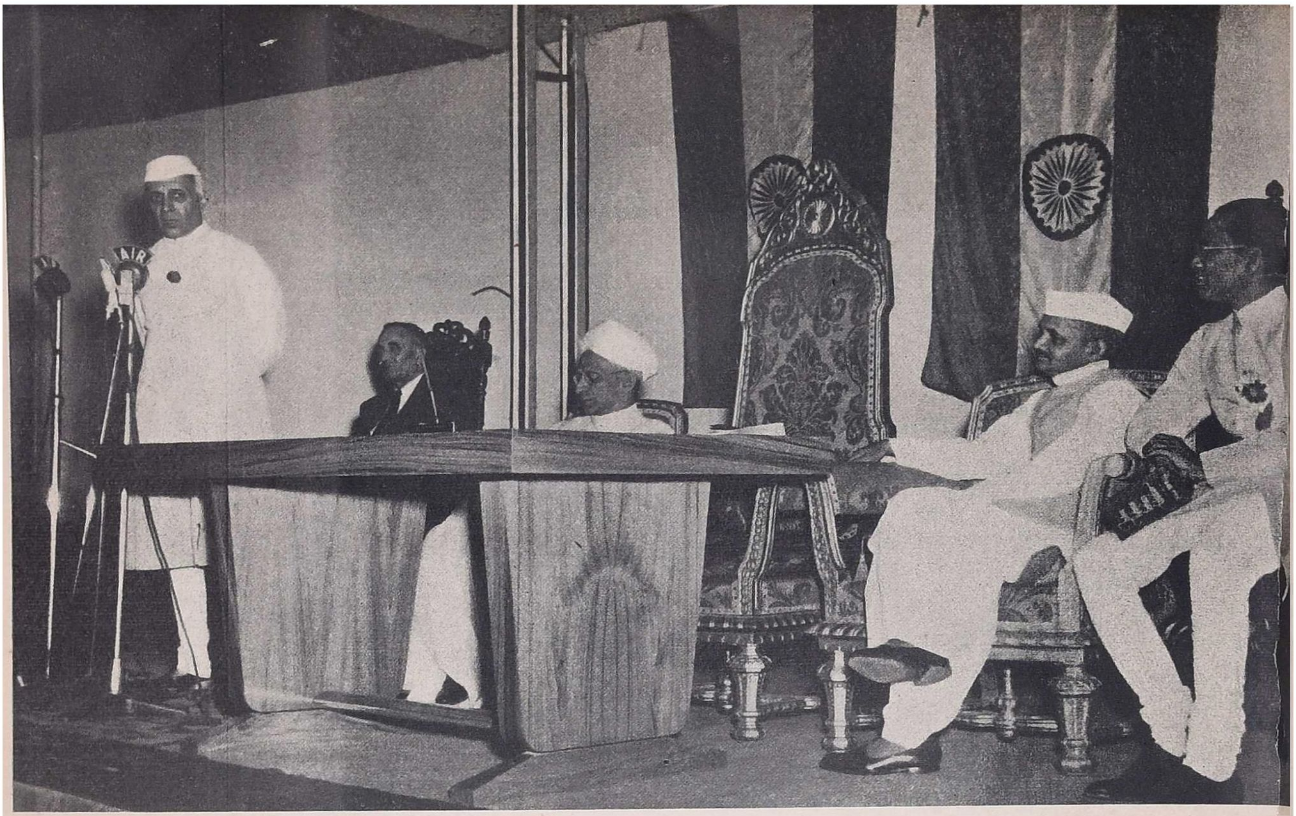


Above : THE PRIME MINISTER ADDRESSING THE DISTINGUISHED GATHERING ON THE OCCASION OF THE INAUGURATION OF THE INDIAN RAILWAY CENTENARY EXHIBITION ON 7 MARCH, 1953

Below : AN AERIAL VIEW OF THE INDIAN RAILWAY CENTENARY EXHIBITION, MATHURA ROAD, NEW DELHI, 7 MARCH—17 MAY, 1953

CHAPTER I

GENERAL

1. General features of the year.—The year under review maintained generally the standards of working that characterized the previous year. There were, however, certain adverse factors which affected the gross earnings during the year and the volume of traffic handled.

The level of railway earnings is determined by the volume of transportation handled and this in turn is governed by the general economic activity of the country. During the year there were substantial decreases in international trade. While the value of both imports and exports recorded heavy decreases, the quantity index showed an increase under exports, that under imports registering a decrease. As regards internal production, agriculture recorded an increase in both area and yield under food-grains though partially offset by decreases in cash crops, such as sugarcane, groundnut, rape and mustard and cotton. Industrial production during the year recorded a substantial improvement over the previous year. The production of iron and steel, paper and ammonium sulphate was comparatively higher. Coal raisings touched the level of 36 million tons, the highest so far reached. The progressive increase in electrical energy generated, noticed during recent years was maintained in 1952-3. The level of production of textiles was considerably higher than in the previous year. These increases in domestic production helped to maintain the level of earnings from freight other than coal at about the same level as during 1951-2. Increased earnings from coal, however, reflected the effects of the enhancement of freight charges during the year. One of the gratifying features of the period under review was the labour-management relations which have been on the whole better in most industries. Not only were there no major industrial disputes; the number of man-days lost was also lower than in the previous year.

These factors in the general economic situation in the country are reflected in the earnings and performance of Indian Railways. Freight earnings have been more than in the previous year. Gross earnings, however, were less than the corresponding figures for 1951-2 mainly because of the decline in passenger earnings. The decrease in passenger traffic noticed since 1950-1 continued during the year. On the operational side, Railways continued their efforts to achieve greater efficiency and consequently enhanced capacity to handle additional traffic during the year, resulting in the operation of increased train mileage and improved punctuality in the running of passenger trains.

2. General review of working.—Gross earnings of all railways for the year 1952-3 including those in which Government of India have no financial interest, amounted to Rs. 272·31 crores as against Rs. 294·14 crores for the year 1951-2. The apparent decrease is mainly due to the inclusion of about Rs. 16·31 crores on account of freight charges on Railway stores, fuel, etc., which, however, are now treated as free-hauled traffic on Government Railways commencing from 1 April 1952. The earnings for the year thus show a decrease of about 2 per cent only as compared with the previous year. The decrease has been mainly due to the fall in passenger traffic, goods earnings in fact registered an improvement of about Rs. 6 crores or 4·5 per cent after making due allowance for the element of the freight charges referred to above.

The gross traffic receipts of Government Railways amounted to Rs. 270·56 crores. After meeting all charges, including depreciation amounting to Rs. 30·33* crores, but excluding interest charges, the net revenue on the results of working for the year amounted to Rs. 47·18 crores. In accordance with the terms of the revised convention, the amount of Rs. 33·99 crores, representing the dividend at 4 per cent on the capital

* 33 lakhs are chargeable to capital being depreciation on capital assets of Chittaranjan Locomotive Works as explained in Chapter II para. 21.

invested out of general revenues in the railway undertaking excepting strategic lines was paid, leaving a balance of Rs. 13·19 crores which was allocated as follows:

Development fund	Rs. 12·00 crores
Revenue Reserve fund	Rs. 1·19 crores

Certain important statistics relating to the traffic handled during 1952-3 as compared with 1951-2 for all Railways are given below.

PRINCIPAL STATISTICS OF WORKING OF ALL RAILWAYS

Items		1951-2	**1952-3**	Percentage variations
Number of passengers carried	(in millions)	1,232·1	**1,184·4**	—3·9
Passenger miles	(in millions)	39,550·8*	**36,035·6**	—8·9
Earnings from passengers	(in crores) Rs.	111·42	**101·87**	—8·6
Average amount earned per passenger per mile	Pies	5·41	**5·43**	+0·4
Average miles a passenger was carried	Miles	32·1	**30·4**	—5·3
Freight tons carried	(in millions)	97·9*	**98·4**	+0·5
Net ton miles	(in millions)	29,018	**28,961**	—0·2
Earnings from goods carried	(in crores) Rs.	153·95†	**143·80**	—6·6 +4·5§
Average amount earned per ton per mile	Pies	10·2	**11·2**	+9·8
Average mile a ton of goods was carried	Miles	296·5	**294·4**	—0·7

The goods traffic practically remained at the last year's level. But the volume of passenger traffic suffered a substantial decrease. The number of passengers carried in 1952-3 was 3·9 per cent less than in the previous year. The decrease in passenger miles which amounted to 36,036 million miles was even greater, namely 8·9 per cent less than the previous year. Net ton miles also showed a decrease of 0·2 per cent from 29,018 to 28,961 million. Average lead of passenger and goods traffic also decreased from 32·1 to 30·4 and from 296·5 to 294·4 miles respectively.

The position is substantially the same on the Government Railways. The number of passengers carried and passenger miles in 1952-3 on Government Railways decreased by 3·9 and 8·9 per cent respectively as compared with 1951-2. The decline in passenger traffic is reflected in all the classes except the Air-conditioned which recorded an increase of about 31 per cent in passenger miles. The First, Second, Inter and Third classes all recorded decreases in passenger miles of 6, 15, 17 and 9 per cent respectively. The shift in passenger traffic towards lower class travel from upper classes noticed last year continued to some extent during the year under report as well. This is reflected in the relative volume of traffic in the Third class which accounted for 94·8 per cent of the total passenger miles in 1952-3 as against 94·4 per cent in 1951-2. In view of the magnitude of the Third class traffic as compared with traffic in other classes even a small percentage variation in the figures represents quite a substantial volume of traffic numerically.

Although the volume of goods traffic on Government Railways during the year stated in terms of net ton miles had shown a decrease of 0·2 per cent over the preceding year, there was, however, no deterioration in the revenue-earning tonnage handled. Revenue-earning traffic, in fact, registered an increase of about 3 per cent over the previous year. An analysis of the movements during the year shows the composition of the goods to be 38·89 per cent under coal, 9·52 per cent under food grains and pulses, 2·03 per cent under oil seeds, and 49·56 per cent under 'other commodities'. The composition of goods traffic in 1952-3 as compared with 1951-2 showed proportionately slight increases under 'coal for the public', 'oilseeds' and 'other commodities' but substantial decreases under 'grain' and 'railway coal'.

* Revised figures.

† Inclusive of freight charges on Railway stores, fuel, etc., (about Rs. 16·31 crores), which are treated as free-hauled traffic from 1 April 1952.

§ Exclusive of the freight element referred to in the explanation '†' above.

Turning to the operating aspect, the Government Railways during the year operated 3·51 million train miles more during 1952-3, or 1·97 per cent more than the previous year.

The punctuality of passenger trains showed an all round improvement on both gauges, the percentage having advanced from 78·81 and 77·70 in 1951-2 to 82·14 and 83·57 in 1952-3 on broad and metre gauges respectively. The number of wagons loaded on the broad gauge during 1952-3 was 4,392,574 recording an increase of 162,156 wagons or 3·83 per cent over the previous year; on the metre gauge the number loaded being 2,613,148 *i.e.,* an increase of 6,108 or 0·23 per cent. The mileage performed daily on an average per wagon rose from 40·9 in 1951-2 to 41·8 miles in 1952-3 on the broad gauge but declined from 32·4 to 31·4 on the metre gauge. As compared with 1951-2 the transportation effected by wagons per day as shown by the net ton miles per wagon day, however, fell from 463 to 452 on broad gauge in 1952-3 but improved on the metre gauge from 198 to 204. Similarly, the net freight carried per train decrease by 18 tons on the broad gauge but increased by 16 tons on the metre gauge. Net ton miles per locomotive day on the line and in use, also showed a similar trend on both the gauges. The slight deterioration in net (freight) loads hauled on the broad gauge is accounted for partly by the change in the pattern of traffic, as already mentioned, involving a decline in the traffic handled in grain and railway coal which give comparatively higher loads per wagon as compared with the lighter merchandise. Another reason, however, is a slight drop in the percentage of loaded to total wagon miles on the broad gauge from 69·4 in 1951-2 to 69·1 in 1952-3. The average number of engines in use daily during 1952-3 rose by 1·36 per cent on the broad gauge and 2·57 on the metre gauge as compared with 1951-2. The percentage of engines under or awaiting repairs practically remained the same as during the last year on the broad gauge, *viz.,* 18 per cent, but on the metre gauge it rose from 16 to 17 per cent during 1952-3. The engine user in terms of engine miles per day per engine on line (*i.e.,* inclusive of the time under repairs, etc.) increased from 78 miles in 1951-2 to 80 miles in 1952-3 on the broad gauge and remained unchanged at 75 miles on the metre gauge.

3. Regrouping of railways.—The programme of regrouping was completed during the year with the inauguration on 14 April 1952 of the Eastern, North Eastern and Northern Railways. The formation of new boundaries, however, was phased over a period of a month and was completed with effect from the midnight of 14 May 1952. The Eastern Railway with 5,674·90 route miles was formed by the integration of the Bengal Nagpur Railway with the Sealdah, Howrah, Asansol and Dinapore divisions and Dhanbad Transportation Division of the East Indian Railway. The remaining parts of the East Indian Railway, *viz.*, the Allahabad, Lucknow and Moradabad Divisions were incorporated into the Northern Railway which in addition included the Eastern Punjab Railway, the Jodhpur Railway, the Bikaner State Railway and Delhi-Rewari-Fazilka section of the Western Railway. The Northern Railway has a route mileage of 6,039·72 miles. The North Eastern Railway was formed by the merger of the Oudh Tirhut Railway, Assam Railway and the Kanpur-Achnera Section of the Western Railway. The total route mileage of the North Eastern Railway is 4,800·82 miles.

In carrying out the regrouping scheme, care was taken to ensure the least dislocation in, and the minimum disturbance to, actual working during the process of integration. As no vital change was made in the existing District or Divisional pattern on which the constituent railways were organized, the machinery at the lower levels has been kept in tact and unaffected.

Of the six regrouped railways, the Southern, Western and North Eastern Railways were on the District basis. In order to avoid centralized control becoming unwieldy, these railways have been divided into Regional units, each of which being in charge of three Regional Deputies dealing with Operating, Engineering and Mechanical Engineering functions, to provide

for intermediate co-ordination on their respective Regional Headquarters. In the case of the Central and Northern Railways, the principal constituent units were already organized on the Divisional pattern and the remaining units which have been merged with them have lent themselves to being assimilated to the pattern of the larger unit. The Eastern Railway, however, presented the problem of integrating two units, of which the East Indian Railway portion was worked on the Divisional system and the Bengal Nagpur Railway portion on the District system. In accordance with the policy followed in the organization of the other zones, the Districts and the Divisions in the two portions of the integrated railway were left essentially undisturbed. The existing Divisions with certain minor absorptions from the *ex*-Bengal Nagpur Railway have been left to function as before, and the balance of the Bengal Nagpur Railway—with the exception of the Khargpur District and Khurda Road Sub-District which are being controlled from the Headquarters as before—has been constituted into a Region. The post of a Senior Deputy General Manager has been created in each of the zones in order to assist the General Manager in the managerial problems of a larger administration.

4. Five Year Plan.—During the year under review, the Government of India published the *First Five Year Plan*. The total Plan outlay in the period 1951-6 has been placed at Rs. 2,069 crores; out of this expenditure the share of the Indian Railways is Rs. 400 crores spread in an increasing measure over the range of the five years in question. The Railways themselves were expected to find Rs. 320 crores of this from their surpluses and other resources, while the Central Revenues would contribute the balance of Rs. 80 crores.

Rehabilitation of railway assets, both mobile and immobile, is the main problem in the railway part of the Plan. The ravages of War and Partition and the back-log of arrears in regular maintenance and renewals which mounted up from as far back as the depression of the thirties and were accentuated by the acquisition of *ex*-Company and *ex*-States Railways, have inevitably determined the pattern of the outlay in the Plan period. However, inescapable items of development and some new projects vital to the growing industrial economy of the country have been provided for. The Plan has been cast on the assumption that there would be a 10 per cent increase in freight traffic at the end of 1955-6 and the rehabilitation and line capacity works have therefore been designed to meet this anticipated increase to the extent possible within the limits of the resources prescribed.

The following table gives a brief picture of the targets of expenditure in the Plan and performance in the first two years:

DETAIL OF RAILWAY EXPENDITURE IN THE PLAN PERIOD

(In crores of rupees)

——	1951-2 (Actuals)	1952-3 (Approximate Actuals)	1953-4 (Budget)	Last two years	Five years' Total
Rolling-stock and machinery	34·36	30·50	42·79	100·31	207·96
Track	9·72	11·02	13·10	31·03	64·87
Bridges	1·00	1·16	1·18	2·26	5·60
Other structural and engineering works	6·68	7·23	9·00	20·50	43·41
Collieries and ports	0·16	0·05	0·56	1·72	2·49
Labour welfare, staff quarters and other welfare works	3·74	3·27	4·86	12·22	24·09
Restoration of lines dismantled during the war	0·50	0·94	2·51	1·71	5·66
New lines including electrification of track and major bridges	6·76	4·12	5·58	12·06	28·52
Passenger amenities	2·45	2·99	3·00	6·56	15·00
Miscellaneous items	5·49	—1·19	—2·97	1·07	2·40
TOTAL	70·86	60·09	79·61	189·44	400·00

As in the other sectors, the momentum is expected to gather as the plan proceeds and the main weight of the outlay will be borne in the concluding years of the plan.

5. Acquisition of private railways.—Two private railways were acquired during the year, namely the Tezpur-Balipara Light Railway, a narrow gauge line, 20·10 miles long, which was owned and operated by the Tezpur-Balipara Tramway Company Limited, and the Tinnevelly-Tiruchendur Railway, a metre gauge line, 38·18 miles long which was owned by the District Board of Tinnevelly in the State of Madras. The former was acquired with effect from 1 September 1952, and the latter from 24 February 1953. The Tinnevelly-Tiruchendur line was already being worked by the *ex*-South Indian Railway till April 1951 after which date it continued to be worked by the Southern Railway.

It was also decided during the year to purchase the Barsi Light Railway with effect from 1 January 1954. This is a narrow gauge line, 202·57 miles long, owned and operated by the Barsi Light Railway Company Limited incorporated in England.

6. Railways and the Legislatures.—In February 1952, the Provisional Parliament voted 'On Account' supply for the first four months of the financial year 1952-3, and voting of demands for grants for the full year was left over to the new Parliament. The Budget for the full year 1952-3 was accordingly presented to both the Houses of Parliament on 22 May 1952. General discussion on the Budget took place in the House of the People on 26, 27 and 29 May and in the Council of States on 29, 30 and 31 May. As usual, the general discussion covered a variety of subjects. Demands for Grants were voted by the House of the People on 5, 6 and 9 June 1952. Twenty-one cut motions were moved to discuss general policy. After discussion all the cut motions were negatived.

The Railway Budget for 1953-4 was presented to both the Houses of Parliament on 18 February 1953. The general discussion on the Budget which took place on 23 to 26 February 1953 in the House of the People and on 20, 21 and 23 February in the Council of States covered a variety of subjects. The more important of these related to the financing of the Railways' Five Year Plan, grievances of staff, abolition of First class, regrouping of railways, inadequacy of residences for railway staff, labour policy, balances in railway funds, deterioration in the earnings of railways, restoration of lines dismantled during the last war, passenger amenities, corruption, anomalies in pay scales, arrears in replacement of stock, paucity of wagons, the Railway Centenary Exhibition and manufacture of locomotives in Chittaranjan Locomotive Works.

One hundred cut motions were moved in the House of the People to discuss general policy. These covered a large ground, such as non-confirmation of staff in the Railway Board, short supply of wagons, inadequate representation of scheduled castes in railway services, economy in expenditure, abolition of the category of Class II officers, implementation of Central Pay Commission's Award regarding compensatory and house rent allowances, economy in pay of officers, future set-up of Railway Clearing Accounts Office, corruption in administration, fall in earnings of railways, construction of new lines and inadequate provision of amenities.

The cut motions after discussion were negatived.

Out of a total number of 7,957 questions asked in both the Houses of Parliament during the year 1952-3, 832 or about 10 per cent related to the Ministry of Railways. A wide range of topics were covered in these, such as, construction of new lines, import of railway wagons and locomotives, regrouping of railways, measures to prevent accidents, passenger amenities and staff matters, etc.

7. Local Advisory Committees.—The Local Advisory Committees continued to function as a useful organ of public opinion on railway matters. In all, 77 meetings of these committees were held during 1952-3.

During the year Standing Passenger Amenities Committees were set up on each railway with the purpose of framing the annual passenger amenity programme in consultation with them, so that public opinion may be fully associated in this important matter. These bodies were constituted as sub-committees of the Local Advisory Committees, consisting of the General

Manager and Heads of Engineering, Operating and Commercial Departments of each railway and two or three members from each Local Advisory Committee of the Railway.

An important decision was taken during the year under review to replace the Local Advisory Committees with the more representative Railway Users' Consultative Committees. There were to be Six Zonal Railway Users' Consultative Committees at the headquarters of the six regrouped railways in addition to three Regional / Divisional Railway Users' Consultative Committees on each railway. It was also decided to constitute a National Railway Users' Consultative Council at the Centre.

8. Amenities for the public.—The improvements in this respect, which were carried out during the year, are mentioned in detail in Chapter X. To mention a few of the more important measures taken in this respect, 184 new Third class broad gauge and 135 metre gauge coaches, and 54 broad gauge and 136 metre gauge locomotives were placed on line and the number of passenger train miles increased from 104,632,000 in 1951-2 to 106,529,000 in 1952-3, resulting in an easing of the position regarding overcrowding.

To improve the speed of issue of tickets in suburban trains, automatic self-ticket-printing machines were introduced in the Bombay and Calcutta suburban sections.

Special drives and surprise checks at stations and booking offices were carried out to ensure that the booking offices were opened in time and sufficient small change was available with the booking clerks.

Railways also reviewed their arrangements for cleaning lavatories of carriages, particularly in Third class, with a view to ensure that the lavatories were cleaned at every station on the run, where the trains stopped long enough. As part of the drive, clear instructions for the guidance of passengers, such as, for example, " Passengers are requested to use the flush before leaving the lavatory ", were displayed both in Hindi and in the regional languages.

It was laid down that at every station, the following minimum amenities should be provided:

Waiting hall	Improved type latrines
Benches	Pucca platform surface
Suitable arrangements for lighting waiting hall and booking offices	Proper booking arrangements
Drinking water supply	Planting of shady trees

The Passenger Amenities Committees, as already referred to, examined and prescribed on each railway the order of priority for executing amenity works.

Further, improvement in respect of the availability of supply of drinking water to passengers was also effected. In addition to maintaining a group of some twenty watermen at important stations which was in force in the previous year, it was arranged at important stations at least three watermen should be available for each passenger carrying train, *i.e.*, one in the rear, one in front and one in the middle portion, so that drinking water was easily available to passengers in all parts of the train. A scheme of travelling watermen on trains was also introduced on the Bikaner, Jodhpur and Moradabad Divisions of the Northern Railway and Lumding-Badarpur and Rangiya-Rangapara sections of the North Eastern Railway. The number of stations where the facility of electrically cooled water was provided rose to 83 during the year under review.

The safety of passengers in trains, especially ladies, also received the attention of the railways. A special step taken in this direction was that while the passenger carriages were going through shops, railways were instructed to check the window bars in lavatories of compartments to ensure that they were not easily removable.

9. Staff.—Certain developments relating to staff during the year under review are mentioned below.

The implementation of the recommendations of the Joint Advisory Committee, referred to in the last Report, continued during the year under

review. Following representations regarding the inadequacy of the weightage granted in 1949 for fixation of pay of staff in the prescribed scales, Government decided to give further benefits to pre-1931 staff of the original Indian Government Railways with effect from 1 January 1952.

The relations between the Railway Board and Labour continued to be cordial during the year under review. The permanent negotiating machinery which was set up on railways with effect from 1 January 1952 with a view to maintaining contact with Labour and resolving disputes and differences which might arise between them and the Administration, functioned satisfactorily.

The Adjudicator's Award was implemented by 31 March 1951 on the former Indian Government Railways in respect of hours of work and periodic rest. Necessary steps were being taken by railways to provide the prescribed leave reserves during the year. The application of the hours of employment regulations to *ex*-States Railway Sections of the Indian Railways was making steady progress.

Forty-two appointments were made to the Superior Railway Services by direct recruitment during the year and four promotions were made to those services from Class II and Class III services.

During the year under review the position regarding the absorption of surplus staff in alternative vacancies further improved. About 2,900 men were absorbed in alternative posts ; about 80 men had, however, to be discharged as they refused alternative employment.

During the year the Railways continued to maintain 152 railway schools as well as 31 training schools. The Railway Staff College at Baroda functioned with increased activities during the year.

The recommendations of the Dearness Allowance Committee which commenced to function from 15 July 1952 to consider the absorption of portion of dearness allowance into pay were accepted by Government and have been made effective from 1 April 1953, the recommendation relating to retirement benefits only having effect from 15 July 1952.

The Railway Service Commissions with headquarters at Calcutta and Bombay continued to conduct recruitment of Class III staff for the railways. The Calcutta Commission recruited 5,621 staff for the Eastern, North-Eastern and Northern Railways, the Railway Clearing Accounts Office and the Chittaranjan Locomotive Works, while the Bombay Commission met demands for 8,690 staff from the Western, Central and Southern Railways.

10. Security measures on Railways.—On railways where the Railway Protection Police is functioning the strength of the force has been reviewed from time to time in consultation with the State Governments and Railway Administrations concerned. During the year under review there has been no appreciable change in the general situation or the strength of the force.

Passenger trains in certain areas continued to be provided with escorts.

Lavatory windows and other windows in Inter, Second and First class carriages and in Ladies' Third class compartments have been fitted with iron bars on all the railways in such a way as already referred to earlier, that they cannot be easily removed from the windows of lavatories and compartments. The railway staff have been specially instructed to check safety devices in every passenger train before it leaves the starting station.

11. Publicity and public relations.—Close liaison was maintained with the Press through press notes and press conferences for keeping the public informed about the railways' operational efficiency, improvement in services, provision of extra amenities for the passengers and other phases of railway working.

The introduction of concessional return tickets to important hill stations in India, "Travel As You Like" tickets and concessional tickets for journey to Delhi for visiting the Railway Centenary Exhibition, were given special

publicity by means of posters, announcements and display of advertisements in selected newspapers.

Anticipating a more detailed reference in the report for the succeeding year, reference may be made here to the commemoration volume entitled, *Indian Railways—One Hundred Years,* brought out by the Ministry of Railways (Railway Board) on the occasion of the Centenary of the Indian Railways. The reader of this book is taken to the earliest beginnings of railway construction in India. The later phases of expansion and development, the problems and difficulties which had to be faced in the process, and the final emergence of Indian Railways as the largest nationalized undertaking in the country, are described in a style intelligible to the non-technical reader. The various aspects of railway working are discussed in fair detail.

12. **Complaints.**—The Complaints Organization for ensuring the prompt disposal of complaints received from the public continued to function. The volume of work handled may be gauged from the fact that during the year 24,167 complaints were dealt with by Railway Administrations. The Railway Board's office dealt with about 1,400 complaints. Suitable disciplinary action was taken against the staff concerned in all cases where the complaints were substantiated.

13. **Floods and cyclones.**—Considerable damage was done to railway property during the year as a result of heavy rains, floods, and cyclones. Details of the damages caused by such natural causes are shown in paragraph 70 of Chapter IV of this report.

14. **Railway Rates Tribunal.**—At the beginning of the year the Tribunal had on hand four complaints from the public and one application from the Central Government for enhancement of classification pending final hearing and disposal. Of the five cases pending on 31 March 1952, three complaints and one application from the Central Government were disposed of. During the year under report, five cases were filed by the public of which one was allowed to be withdrawn thus leaving on hand for disposal on 31 March 1953, five complaints from the public. These related to (i) quotation of station-to-station rates for cast iron pipes from Bhadravati to Bombay, Badlapur, Ambarnath and Kalyan (ii) application of W.L./F standard wagon load scale for cast iron pipes and quotation of station-to-station rates for cast iron pipes from BISCO to Bombay and Madras, (iii) quotation of station-to-station rates for jute to Raigarh from Sahibganj, Dhulian Ganges, Shalimar, Kesinga, etc., on the same basis as was in force in 1949, (iv) quotation of station-to-station rates for jute from certain stations in Cuttack area, Shalimar, and Ankapalle to Guntur and reduction in classification for jute, (v) removal of the levy of short distance charge and of minimum charge per wagon at Rs. 1-12 per ton on traffic on grass dry, bagasse and paper waste cuttings and application of W.L./F standard telescopic wagon load scale to strawboard.

In addition to the cases formally filed, the Tribunal received several letters containing specific grievances ; but as these did not comply with the proper procedure or dealt with matters over which the Tribunal had no jurisdiction, the Tribunal advised the parties that they could take no cognizance of the representations which were not submitted in accordance with the prescribed rules of procedure.

15. **Implementation of decisions for division of rolling-stock between India and Pakistan.**—No meeting of the Indo-Pakistan Stores Sub-Committee (Railways) could be held during this year also to settle the points of disagreement and to decide other outstanding issues. The outstanding matters were, however, pursued through correspondence as far as possible, but the outcome has not been satisfactory and no appreciable progress has been made in the implementation of decisions already reached for the division of rolling-stock.

16. **Loss of man-days as a result of strikes.**—The total number of man-days lost as a result of strikes in workshops, running sheds and other similar establishments of the Indian Railways during 1952-3 was approximately 0·052 per cent of the total man-days worked as against 0·013 per cent during 1951-2, the position in this respect thus showing a deterioration as compared

with the previous year. The increase in the loss of man-days on the Eastern and Northern Railways was mainly due to staff having struck work on the ground of alleged delay in refund of payment of compulsory savings of Provident Fund, while in the case of North-Eastern Railway the increase in the loss of man-days was due to staff having struck work at Gorakhpur as a result of an agitation connected with certain clerks having been asked to appear before the Service Commission and connected developments. The increase in the loss of man-days on the Western and Southern Railways was mainly due to the staff having struck work as a protest against higher prices of cereals. The number of man-days worked during the years 1951-2 and 1952-3 totalled 136,695,022 and 117,782,234 respectively and the man-days lost owing to strikes amounted to 17,353 and 61,608 respectively.

The details of the total number of man-days worked during 1951-2 and 1952-3 and the number of man-days lost by railways in consequence of strikes are summarized in the following table:

NUMBER OF MAN-DAYS WORKED AND LOST THROUGH STRIKES DURING 1951-2 AND 1952-3

Railways	Year	Number of man-days worked	Number of man-days lost owing to: Legal strikes	Number of man-days lost owing to: Illegal strikes
C. L. W	1951-2	1,702,681	..	..
	1952-3	1,826,210	..	890
Central	1951-2	13,634,902	..	10,589
	1952-3	14,209,026	..	7,022
Ex. B. N.	1951-2	12,635,168	..	228
Ex E. I.	1951-2	54,926,483	..	5,39
Eastern	1952-3	49,141,441	..	13,654
Ex. E. P.	1951-2	3,751,429	..	..
Northern	1952-3	17,589,045	..	15,621
Ex. O. T.	1951-2	6,066,480	..	405
Ex. Assam	1951-2	13,853,208	..	36
North-Eastern	1952-3	11,661,004	..	14,252
Southern	1951-2	12,939,791	..	57
	1952-3	13,210,322	..	7,454
Western	1951-2	17,184,880	..	641
	1952-3	10,145,186	..	2,715
Total	1951-2	136,695,022	..	17,353
	1952-3	117,782,234	..	61,608

17. Indian Railways Centenary Exhibition.—In commemoration of the Indian Railways Centenary which fell on 16 April 1953, the Railway Board organized an Indian Railways Centenary Exhibition in New Delhi. The Exhibition was opened on 7 March 1953, by Shri Jawaharlal Nehru, Prime Minister of India.

The central theme of the Centenary Exhibition was designed to portray the progress of the Indian Railways during their hundred years of growth—the technical and industrial effort that lies behind the scenes and the planning

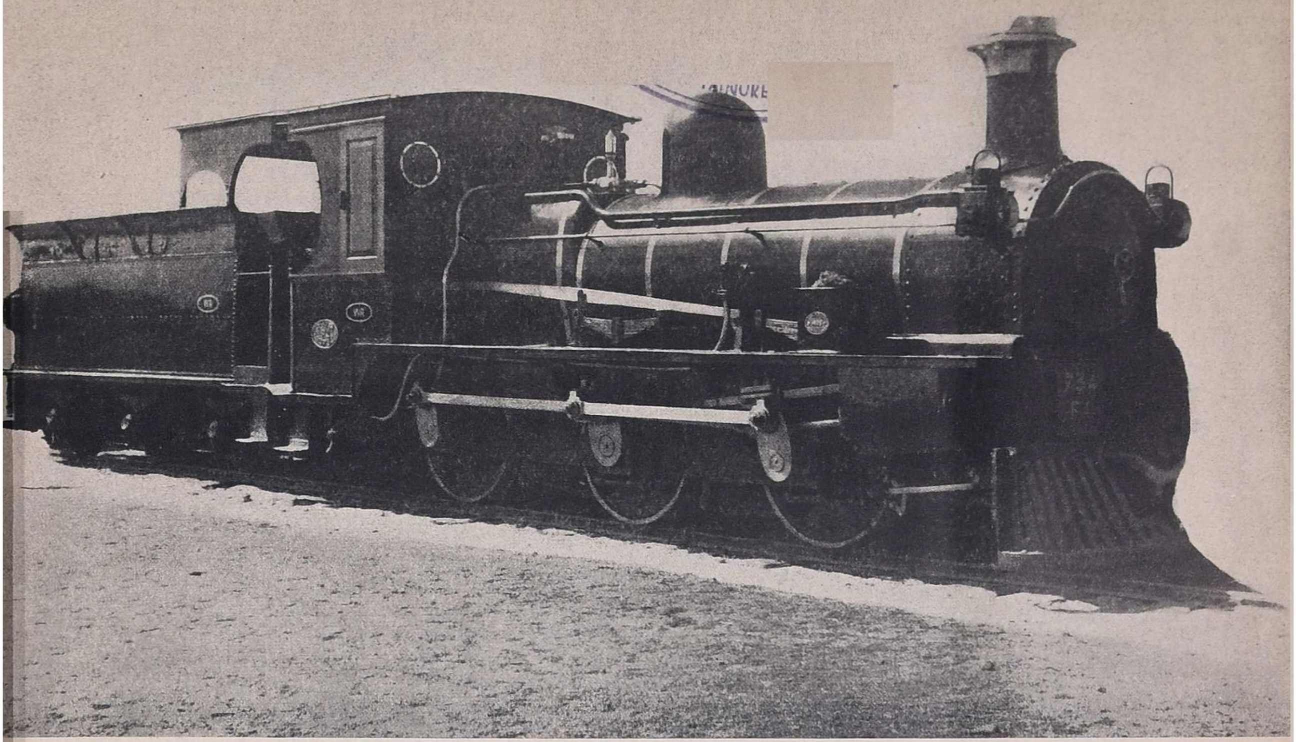
and achievement of self-sufficiency in the manufacture of railway components. The Exhibition was intended moreover to inform the people of how Railways function, how much of the country's capital is invested in them, what careers are open on Railways and in what manner railways assist in the implementation of the first Five Year Plan.

The Exhibition was organized as an international one; many countries were represented besides India either directly or by manufacturers of railway rolling-stock and components. The participating countries were; United Kingdom, France, Switzerland, West Germany, Italy, Yugoslavia, Denmark, Sweden, Belgium, Holland, Austria, United States of America and Japan.

The site of the Exhibition close to the Purana Quila, provided an attractive venue. Representative exhibits of rolling-stock portraying the progress in design over the century were displayed as field units, the "Express" locomotive built in 1855, the first locomotive built in India at Ajmer in 1896, the latest WG locomotive turned out by Government-owned Chittaranjan Locomotive Works, and the YP locomotive built at Tata Locomotive and Engineering Company were among the principal locomotive exhibits, while the old type of passenger vehicles used on the Rohilkhand and Kumaon Railway, diesel rail cars and air-conditioned cars on the metre gauge and broad gauge and all-steel coach built by Hindustan Aircraft Limited, exhibited the progress achieved in travel comforts. The standards organized by the Indian Railways included a large number of interesting exhibits featuring important aspects of railway working such as modern methods of signal working, mechanized marshalling yards, systems of repair and maintenance in railway workshops, etc. A large number of indigenous manufacturers put up stands of their own, showing a significant range of their products which are commonly consumed by Indian Railways. The Ministries of Transport, Communications, Information and Broadcasting and Production, the Corps of Engineers, and the States of Bombay, West Bengal, Bihar, Madhya Bharat and Orissa also participated in the Exhibition.

Besides exhibits of educational value, popular attractions were also provided. The most popular entertainment was that provided by the Railways themselves, namely, the joy-rides on a two-mile track on the Darjeeling-Himalayan narrow gauge Railway which was specially laid in the exhibition grounds.

When the year under report came to a close, the Exhibition was still open and was attracting large numbers of visitors. On an average about a hundred thousand people visited the Exhibition every week from the date of its opening.



HE FIRST INDIA BUILT LOCOMOTIVE—METER GAUGE ENGINE OF 1896 BUILT IN AJMER RAILWAY WORKSHOPS AND STILL IN USE (EXHIBITED AT THE RAILWAY CENTENARY EXHIBITION, NEW DELHI)

INTERIOR VIEW OF METRE GAUGE AIR-CONDITIONED TOURIST CAR NO. 19—DESIGNED TO WORK BOTH AIR-CONDITIONED AND NON-AIR-CONDITIONED (EXHIBITED AT THE RAILWAY CENTENARY EXHIBITION)

CHAPTER II

FINANCIAL RESULTS

A. AGRICULTURAL CONDITIONS AND FOREIGN TRADE DURING 1952-3

18. Monsoon conditions and agricultural situation in India 1952-3.— The economy of India which is predominantly agricultural in character is profoundly affected by monsoon conditions and the financial results of Railways are largely dependent upon the agricultural situation. The principal features of the year are briefly referred to in the following paragraphs :

The southwest monsoon of 1952 was on the whole satisfactory as compared with the last two years which were adversely affected by a series of floods and droughts and consequently the outturn of crops. In 1952, although the monsoon set in over Travancore-Cochin by 20 May 1952, that is, about ten days earlier than usual, its further advance into the country was slow and it spread over the greater part of the country only towards the end of June 1952. During July-August, the monsoon was active in north-east India, causing heavy rains and floods in parts of Assam, north Bihar and eastern U. P., affecting adversely the standing crops. Severe floods were, however, reported from north-east Assam and North Bihar in the first week of September. These floods caused extensive damage to crops in the affected areas in the two States. In Madras and Mysore, however, widespread rains received towards the end of September or beginning of October mitigated to some extent the detrimental effects of insufficient rainfall on the standing crops.

Over large areas of south and Peninsular India, late *Kharif* crops are sown in September and October and these crops depend for their growth on the rains provided by the north-east monsoon in the four months of October to January. The post monsoon period opened with rains over most parts of the Peninsular and north-east India except the sub-Himalayan West Bengal and Bihar. This rainfall proved greatly beneficial to the standing crops specially in Rayalaseema, Tamilnad and Deccan (Desh) where drought had prevailed since the end of July. At the end of November, a cyclone hit south-east Tamilnad, causing considerable damage to paddy and plantation crops in Tanjore district and slight damage to crops in Tiruchirapally and South Arcot districts of Madras. In the first week of December, widespread rains were received in Madras, Mysore and South Hyderabad giving much needed rains to the late sown *kharif* crops and alleviating the water scarcity in irrigation sources. The north-east monsoon weakened thereafter from about the middle of December and continued to be weak for the rest of the period.

Rabi crops are generally sown during the months of October to December and depend for their growth on the rains received during October to January. Rainfall during the middle of December to the middle of January helps the grain formation of rabi crops. The absence of earlier winter showers adversely affected the growth of *rabi* crops in the south-east parts specially in Madras and Mysore States. During January 1953, hailstorms in parts of Bihar, Punjab, Madhya Pradesh, U. P., Rajasthan and Himachal Pradesh, caused slight damage to crops in these areas. The rains in the three months of March to May help in the sowing of jute and early autumn paddy in the north eastern parts, and in the southern areas, the sowing of *kharif* paddy, cotton and sugarcane. In March 1953 there was excessive rain in Assam, Sub-Himalayan West Bengal and Konkan, but the rainfall in the rest of the country was practically absent. The monsoon strengthened over most parts of the Peninsula from the first to the third week of April. These rains proved very beneficial to the sowing of paddy in the southern States. During May, however, the usual seasonal showers were deficient.

During the year 1952-3, there was a general increase in the area under cereals and pulses except in the case of ragi and barley. As regards cash crops, the acreages during 1952-3 registered small decreases except in the

case of tobacco and groundnut. The over-all production of cereals and pulses increased considerably during 1952-3 as compared with the previous year. Regarding cash crops, there was decrease in the production of sugarcane, groundnut, rape and mustard and cotton. The outturn of sesamum, linseed, castor and jute increased despite a fall in their acreages. The over-all increase in both area and production of cereals and other crops during 1952-3 is due mainly to favourable weather and crop conditions which prevailed during that year.

The percentage variations as compared with previous year, in area and production of principal crops, according to the latest available information for 1952-3, are indicated below:

VARIATION IN ACREAGE AND YIELD OF PRINCIPAL CROPS IN 1952-3

(*Percentage increase or decrease over 1951-2*)

Crop	*Acreage*	*Yield*
	Per cent	Per cent
Rice	1·4	12·9
Wheat	2·5	12·0
Millets, Maize and Barley	6·3	11·1
Gram and other pulses	0·6	2·9
Sugarcane	−8·7	−13·3
Sesamum	−1·6	3·0
Groundnut	0·5	−5·0
Rape and Mustard	−12·8	−9·6
Linseed	−0·2	12·3
Castorseed	−5·5	1·9
Cotton	−3·2	−2·6
Jute	−6·0	0·4
Tobacco	12·1	6·8

19. Trade review.—There was a recession in the foreign sea and airborne import and export trade of India during 1952-3 as compared with the previous year. The trade levels reached during the year were, however, slightly higher than those of 1951-2.

The total value of imports of foreign merchandise during the year was 633 crores as against 863 crores in 1951-2 showing a drop of 230 crores or about 27 per cent. The fall in the value of imports was mainly due to less imports of wheat, jowar and bajra, raw cotton, other textile materials, chemicals and drugs, cutlery and hardware, dyes and colours, machinery, paper, motor cars, cotton and wollen yarns and manufactures. Of these, jowar and bajra, wheat and raw cotton contributed to a decrease of 162 crores. The imports of rice, kerosene, lubricating oil, petroleum, iron and steel manufactures and electrical goods, however, recorded an increase.

The total recorded value of exports decreased by 151 crores or 21·5 per cent being 551 crores during the year as against 702 crores in 1951-2. The exports of jute yarns and manufactures alone were less by 141 crores although part of the decline in the value of exports of Jute manufactures can be explained by the heavy reduction in the rates of export duty. Other noticeable decreases were in spices, tea, tobacco, non-metallic mining and quarry products, gums, resins and lac and hides and skins. There was, however,

an increase in the exports of iron ore, iron and steel, manganese ore, oils, raw cotton, raw wool, cotton yarns and manufactures and fruits and vegetables.

The value of re-exports during the year was only Rs. 6 crores as against Rs. 14 crores in 1951-2. There was practically no re-export of raw jute and this accounts almost wholly for the fall in the value of re-exports during the year.

B. FINANCIAL RESULTS OF INDIAN RAILWAYS (INCLUDING WORKED LINES)

20. Changes in accounting and financial structure of railways.—With the completion of integration of Indian Railways into a unified Railway undertaking, the following changes in the accounting and financial structure of Railways have been introduced with effect from the accounts for 1952-3.

(1) No apportionment of earnings accruing from the traffic interchanged purely between the Indian Railways is made. The earnings actually collected by a zonal Railway either in cash or by book adjustment are taken in the accounts as the earnings of that Railway.

(2) No inter-Railway adjustment is made in the financial accounts (Revenue and Capital) of Indian Railways, including manufacturing units like Chittaranjan Locomotive Works, of freight charges for the carriage of railway stores, fuel, etc., i.e., so far as the financial accounts are concerned, these stores are carried free of charge. *Pro forma* accounts of such freight charges are, however, maintained by each zonal Railway broadly classified under revenue, capital, depreciation reserve fund and development fund for statistical and other purposes.

(3) Inter-railway adjustments have also been eliminated in respect of the following :—

(*a*) periodical overhaul, intermediate overhaul, or other repair works done in the workshops of one zonal Railway on behalt of another ;

(*b*) rolling stock manufactured by one zonal Railway on behalt of another;

[The orders under (*a*) and (*b*) above do not, however, apply to independent manufacturing units like Chittaranjan Locomotive Works, the integral Coach Factory, etc.]

(*c*) conference hire and penalty charges; and

(*d*) payment for hire and haulage charges for locomotives and rolling stock.

In comparing the fluctuations in the financial results in paragraphs that follow the above changes should be borne in mind.

21. Financial results of working.—The gross traffic receipts of Indian Railways including the worked lines, for the year 1952-3 amounted to Rs. 270·56 crores as compared with Rs. 290·82 crores in 1951-2, or decrease of Rs. 20·26 crores.

The ordinary working expenses for the year amounted to Rs. 187·96 crores as against Rs. 194·04 crores in 1951-2, or decrease of Rs. 6·08 crores. The contribution to the depreciation reserve fund was Rs. 30·33 crores against Rs. 30·21 crores during 1951-2. Of this amount, the sum of Rs. 30 crores is on account of the Indian Railways capital assets chargeable to their working expenses, while the balance of Rs. 33 lakhs is on account of capital assets of Chittaranjan Locomotive Works by debit to manufacture suspense account. The additional contribution of Rs. 33 lakhs as a charge against capital was necessitated in the interests of accurate costing on commercial principles and this represents the depreciation charges accruing on account of plant and machinery, etc., at Chittaranjan Locomotive Works as an item of cost of the different jobs undertaken. Payments to worked lines as their share of net earnings amounted to Rs. 21 lakhs as against Rs. 31 lakhs in 1951-2. The operating ratio, that is the ratio of working expenses (excluding suspense,

but including appropriation to depreciation reserve fund) to gross earnings, was 80·80 per cent against 77·37 per cent in 1951-2.

The net result of miscellaneous transactions during the year was *minus* Rs. 5·21 crores against *minus* Rs. 4·72 crores in 1951-2.

The net revenue for the year was Rs. 47·18 crores as against Rs. 61·75 crores in the previous year.

The dividend paid to General Revenues during the year was Rs. 33·99 crores as against Rs. 33·41 crores in 1951-2.

The surplus for the year amounted to Rs. 13·19 crores against Rs. 28·34 crores in 1951-2, i.e., a decrease of Rs. 15·15 crores. This was allocated to development and reserve funds as follows:

	Rs. (in crores)
Development fund	12·00
Revenue Reserve Fund	1·19

The interest on the depreciation fund balances, credited to the Fund during the year under review, amounted to Rs. 4·09 crores. The amount withdrawn during the year for renewals was Rs. 40·89 crores against Rs. 35·87 crores in 1951-2 and the net charge against the fund in 1952-3 was Rs. 6·47 crores against Rs. 2·08 crores in 1951-2. The balance in the depreciation reserve fund at the end of the year, including the provisional balance as on 31 March 1950 of Rs. 8·93 crores of the *ex*-States' Railways, was Rs. 116·36 crores as against Rs. 122·02 crores at the end of 1951-2.

The works expenditure during the year amounted to Rs. 60·09 crores as against Rs. 70·77 crores in 1951-2. Of this, an amount of Rs. 7·05 crores was charged to capital, Rs. 40·89 crores to the depreciation reserve fund, Rs. 8·10 crores to Development Fund and Rs. 4·05 crores to Revenue (Open Line Works—Revenue).

22. Traffic receipts.—The total traffic receipts of the Indian Railways, excluding the worked lines, amounted to Rs. 269·67 crores. The details are given in the subjoined statement.

EARNINGS AND NET TRAFFIC RECEIPTS OF INDIAN RAILWAYS

(In crores of rupees)

	1950-1	1951-2	1952-3
Passenger earnings	97·84	1,09·88	**1,00·38**
Other coaching earnings	16·76	19·87	**18·17**
Goods earnings	1,43·01	1,56·79	**1,46·12**
Sundry earnings	4·74	5·05	**5·12**
Suspense	0·66	(—)0·77	**0·77**
Total	2,63·01	2,90·82	**2,70·56**
Less earning of worked lines	1·01	1·08	**0·89**
Net traffic receipts	2,62·00	2,89·74	**2,69·67**

The gross traffic receipts for 1951-2 of Rs. 290·82 crores are inclusive of Rs. 16·31 crores on account of the earnings from the carriage of railway stores and fuel which are treated as free-hauled traffic from 1 April 1952. If the element of freight on railway stores and fuel had been excluded from the traffic receipts for 1951-2, the comparable figure for that year would amount to Rs. 274·51 crores, or only Rs. 3·95 crores more than the gross traffic receipts for the year under review.

Passenger earnings during the year 1952-3 declined by Rs. $9\frac{1}{2}$ crores (first class by Rs. 24 lakhs, second class by Rs. 46 lakhs, inter class by Rs. 90 lakhs and third class by Rs. 798 lakhs, the air conditioned class alone recorded an increase of Rs. 8 lakhs). Earnings from other coaching traffic fell by Rs. 170 lakhs. Goods earnings, however, recorded an increase of

Rs. 5·64 crores as compared with the previous year (exclusive of the element of freight charges referred to above).

23. Working expenses.—A comparison of ordinary working expenses (excluding suspense) under the various demand heads for the year 1952-3 with those for 1951-2 is given in the following statement.

ANALYSIS OF WORKING EXPENSES, INDIAN RAILWAYS

(In crores of rupees)

Demand heads	1951-2	1952-3	Increase (+) Decrease (—) over 1951-2
Administration	24·62	**26·18**	+1·56
Repairs and maintenance	62·57	**64·21**	+1·64
Operating staff	38·93	**41·16**	+2·23
Operation (Fuel)	31·00	**22·20**	—8·80
Operation other than staff and fuel	14·40	**13·48**	—·92
Miscellaneous expenses	20·49	**17·12**	—3·37
Labour welfare	3·60	**3·64**	+·04
TOTAL	1,95·61	**1,87·99**	—7·62

The working expenses for 1951-2 include Rs. 15·01 crores on account of freight charges on railway stores and fuel, etc., while these charges ceased to enter the financial accounts for 1952-3. Accordingly the comparable figures for 1951-2 are Rs. 180·60 crores and thereby the figures for 1952-3 exceed those for 1951-2 by Rs. 7·39 crores. This excess is mainly due to increase in cost of staff appointed to cope with increased work on all railways, annual increments, payments of arrears on account of implementation of Central Pay Commission scales of pay and Joint Advisory Committee's recommendations particularly to staff of the *ex*-States Railways and payment of increase in dearness allowance sanctioned from 1 June 1951 for the full year. The increase under repairs and maintenance is mainly due to more outturn in the repairs of rolling stock, railway assets and installations and also increase in the cost of stores.

An analysis of the financial results of working of the Indian Government Railways showing the capital-at-charge, gross receipts, working expenses, net revenue receipts and dividend, etc., for the last three years is given in the following statement.

FINANCIAL RESULTS OF WORKING OF INDIAN GOVERNMENT RAILWAYS

(Figures in thousands of Rupees)

Year	Capital at charge	Deduct—Amount of capital contributed by companies	Net Government capital at charge	Gross receipts	Working expenses including suspense and depreciation reserve fund	Payment to worked lines	Net traffic receipts	Net miscellaneous expenditure	Net revenue receipts	Percentage of net revenue receipts on capital at charge	Charges against net revenue receipts	Net gain or loss to Government		Remarks
											dividend to general revenues	gain	loss	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1950-1	8,27,03,45	83,47	8,26,19,98	2,63,01,40	2,10,22,83	25,46	52,53,11	4,97,16	36,55,95	4·42	32,50,64	15,05,31	—	—
1951-2	8,50,11,11	83,47	8,49,27,64	2,90,81,71	2,24,03,73	31,38	66,46,60	4,71,97	61,74,63	7·26	33,40,56	28,34,07	—	—
1952-3	8,57,37,82	83,47	8,56,54,35	2,70,55,97	2,17,95,88	21,29	52,38,80	5,20,56	47,18,24	5·50	33,99,47	13,18,77	—	—

NOTES—1. The figures of capital-at-charge are provisional pending closing of pre-partition accounts, and the finalization of the balances of the *ex.* States Railways brought forward on the April, 1950.

2. " The figures of gross receipts and working expenses for 1951-2 are inclusive of the freight charges on the carriage of railway stores and fuel which are treated as free-hauled traffic from 1 April, 1952 and are consequently excluded from the figures for 1952-3."

24. Gain or Loss.—The net results of working stated in terms of gains and losses for the three years are given in the following statement.

GAINS OR LOSSES IN WORKING, INDIAN GOVERNMENT RAILWAYS

(In lakhs of rupees)

	1950-1	1951-2	**1952-3**
Gain	15,05	28,34	**13,19**
Loss	—	—	—

25. Development Fund.—During the year, the Fund received a credit of Rs. 12·76 crores, including interest, while Rs. 8·10 crores were withdrawn from it for meeting expenditure chargeable thereto, giving a net credit of Rs. 4·66 crores to the Fund. The closing balance at credit of the Fund on 31 March, 1953 was Rs. 27·14 crores.

C. GENERAL RESULTS OF WORKING OF ALL INDIAN RAILWAYS

26. Analysis of earnings.—The total earnings of all railways for the year 1952-3 including those in which the Government of India have no financial interest amounted to Rs. 272·31 crores of which Rs. 143·80 crores or 52·8 per cent was from goods traffic, Rs. 101·87 crores or 37·4 per cent from passenger traffic and Rs. 26·64 crores or 9·78 per cent from parcels, luggage and other miscellaneous sources of revenue.

27. Traffic and mileage.—The more important figures of traffic on all Indian Railways for the years 1950-1 to 1952-3 are summarized in the table below. There has been a slight decrease in the total volume of goods traffic carried during the year under review as compared with the previous year but the revenue-earning goods traffic registered an increase. Passenger traffic continued to fall further during 1952-3 also.

STATISTICS OF TRAFFIC OF ALL INDIAN RAILWAYS

——		Year	Govt. Railways	Non-Government Railways	Total of all Railways
Total route mileage		1950—1	33,302·84	776·10	34,078·94
		1951—2	33,343·34	776·10	34,119·44
		1952—3	**33,518.98**	**756·00**	**34,274·98**
Passengers originating	(in millions)	1950—1	1,279	29	1,308
		1951—2	1,204	28	1,232
		1952—3	**1,157**	**27**	**1,184**
Passenger miles	(in millions)	1950—1	41,160	512	41,672
		1951—2	39,030	521	39,551
		1952—3	**35,537**	**499**	**36,036**
Tons originating	(in millions)	1950—1	91	1	92
		1951—2	97	1	98
		1952—3	**97**	**1**	**98**
Net ton miles	(in millions)	1950—1	26,963	45	27,008
		1951—2	28,966	52	29,018
		1952—3	**28,906**	**55**	**28,961**

28. Passenger earnings.—As compared with 1951-2 passenger earnings on all Indian Railways decreased by Rs. 9·55 crores or 8·57 per cent corresponding to a decrease of about 48 millions or 3·90 per cent in the number of passengers carried and about 3,515 millions or 8·89 per cent in passenger miles. The suburban passenger traffic, however, registered a slight increase and the drop in the passenger earnings is almost wholly accounted for by the non-suburban traffic.

The earnings by classes of all Indian Railways from passenger traffic for the three years 1950-1 to 1952-3 are summarized in the table below:

PASSENGER EARNINGS BY CLASSES—ALL INDIAN RAILWAYS

(In lakhs of rupees)

	1950-1	1951-2	**1952-3**
Air-conditioned	13	19	**27**
First Class	2,53	2,25	**2,01**
Second Class	4,54	4,57	**4,11**
Inter Class	6,56	6,68	**5,78**
Third Class	85,46	97,73	**89,70**
Total	99,22	1,11,42	**1,01,87**

The fall in earnings had occurred in all the classes except the air-conditioned which, continuing its upward trend, recorded an increase of 42·6 per cent over the previous year. The first, second, inter and third classes recorded decreases of 10·6, 10·0, 13·5 and 8·22 per cent respectively. The passenger miles by classes indicate an improvement of 30·9 per cent in air-conditioned and decreases of 6·24 per cent, 15·1 per cent, 17·1 per cent and 8·52 per cent respectively in first, second, inter and third classes as compared with the previous year.

The number of passengers carried and the passenger miles by classes for the three years 1950-1, 1951-2 and 1952-3 are stated below:

VOLUME OF PASSENGER TRAFFIC BY CLASSES—ALL INDIAN RAILWAYS

(Figures in millions)

	No. of passengers carried			Pessenger miles		
	1953-1	1951-2	**1952-3**	1950-1	1951-2	**1952-3**
Air-conditioned	0·012	0·017	**0·026**	8	12	**15**
I Class	14·7	14·1	**13·9**	295	263	**247**
II Class	5·5	5·0	**4·3**	667	572	**486**
Inter Class	22·4	21·4	**18·4**	1,554	1,359	**1,126**
III Class	1,265·2	1,191·6	**1,147·8**	39,148	37,345	**34,162**
Total	1,307·8	1,232·1	**1,184·4**	41,672	39,551	**36,036**

Detailed figures of number of passengers carried, passenger miles and earnings are given in summary X and statements 12 and 36 of Volume II of this Report.

29. Goods earnings.—During 1952-3, the earnings from goods carried amounted to Rs. 143·80 crores as against Rs. 153·95 crores in 1951-2. In making the comparison, allowance must be made for the inclusion in the figures for 1951-2, of Rs. 16·31 crores on account of the earnings from the carriage of railway stores and fuel on the Government Railways which are treated as free-hauled traffic with effect from 1 April 1952. Exclusive of this element of freight charges, the comparable figures for the year 1951-2 would be Rs. 137·64. Thus, as compared with 1951-2, goods earnings on all Indian Railways reflect an increase of Rs. 6·16 crores or 4·47 per cent.

Total tonnage of goods carried increased by about half a million or by 0·51 per cent but each ton of freight was carried on an average over a distance of 294·4 miles as compared with 296·5 miles during 1951-2. Thus the total ton miles dropped by 57 millions or 0·2 per cent only. There was, however, no decline in the Revenue-earning tonnage handled which registered an increase of about 3 per cent over the previous year. The volume of goods traffic on the Government Railways during the years 1951-2 and 1952-3 according to different classes of commodities is summarized below:

VOLUME OF GOODS TRAFFIC—GOVERNMENT RAILWAYS

Tons originating (in millions of tons)

	1951-2	1952-3
A—Revenue earning traffic.		
I Products of agriculture—		
(a) Foodgrains	8·75	**8·34**
(b) Others	6·43	**7·01**
II Products of animals	0·34	**0·34**
III Products of mines—		
(a) Coal for public and Non-Government Railways	20·38	**22·33**
(b) Others (including mineral oils)	12·72	**12·93**
IV Products of forests	3·31	**3·20**
V Manufactures	10·02	**10·22**
VI Miscellaneous (including military traffic)	12·92	**12·76**
Total revenue earning traffic	74·87	**77·13**
B—Free-hauled Railway coal and materials	21·79	**19·99**
Total—Revenue earning and non-revenue traffic	96·66	**97·12**

Statement below gives details of earnings from principal commodities carried by Government Railways during 1951-2 and 1952-3. It may be seen from the statement that excepting wheat, fresh fruit and vegetables, salt, oil fuel, kerosene oil, petrol, wood unwrought, iron and steel wrought and provisions, there have been in respect of other commodities more receipts from traffic carried during 1952-3 than during 1951-2.

RECEIPTS FROM DIFFERENT COMMODITIES—GOVERNMENT RAILWAYS

(Figures in lakhs of rupees)

	1951-2	**1952-3**
Rice and paddy	3,01	**3,89**
Gram and pulses	4,78	**5,19**
Wheat and wheat flour	6,05	**3,40**
Oil seeds	3,72	**3,97**
Cotton raw (pressed and unpressed)	2,67	**3,46**
Fruits and vegetables fresh	2,73	**2,54**
Coal, coke and patent fuel for the public	16,16	**21,71**
Marble and stone	3,04	**4,05**
Salt	3,19	**3,01**
Manganese ore	1,90	**2,27**
Other ores	1,58	**2,49**
Oil fuel	3,06	**2,71**
Kerosene oil (in bulk and in tins)	3,32	**3,20**
Petrol (in bulk and in tins)	4,18	**3,62**
Wood unwrought	2,62	**2,61**
Sugar, refined and unrefined	3,18	**3,88**
Cotton manufactured	3,35	**3,55**
Vegetable oil and other edible oils	2,02	**2,10**
Cement	4,13	**4,21**
Iron and steel wrought	9,01	**8,98**
Provisions	3,26	**2,98**
Tea	1,37	**1,99**
Jute raw	1,58	**1,91**
Jute manufactured	98	**1,22**

Detailed statistics of goods traffic are given in summary X, statements 13, 29 and 36 of Volume II of this Report.

30. Measures relating to statistics and statistical organization.—Important changes in character and content of railway statistics have been made during the year which were necessitated by the decision to abolish inter-railway apportionment of through traffic earnings and elimination of inter-railway and inter-departmental adjustments, for freight charges for the carriage of railway stores, fuel, etc. Thus commencing with the statistics of April 1952, earnings, working expenses and derivative results and ratios based on these units will be available only for the Government Railways as a whole and not for the individual railways separately. As the freight charges for the carriage

of Railway Stores, fuel, etc., no longer enter into the financial accounts, it has become necessary to distinguish 'revenue-earning' from 'non-revenue' traffic so as to indicate the total transport output and the traffic from which railway earnings are derived. The mode of presentation of the financial and goods revenue statistics in Volume II of this Report (statements 1 to 7, 12, 13, 14, 29, 30 and the statistical summaries I to VI) has been altered to accord with the above changes.

Further, as a result of the introduction of the prescribed scales of pay, implementation of the Joint Advisory Committee's recommendations and classification of the workshops and artisan staff into Class III and Class IV staff, changes have also been made in presentation of the staff statistics in appendix 'C' of Volume II of this Report.

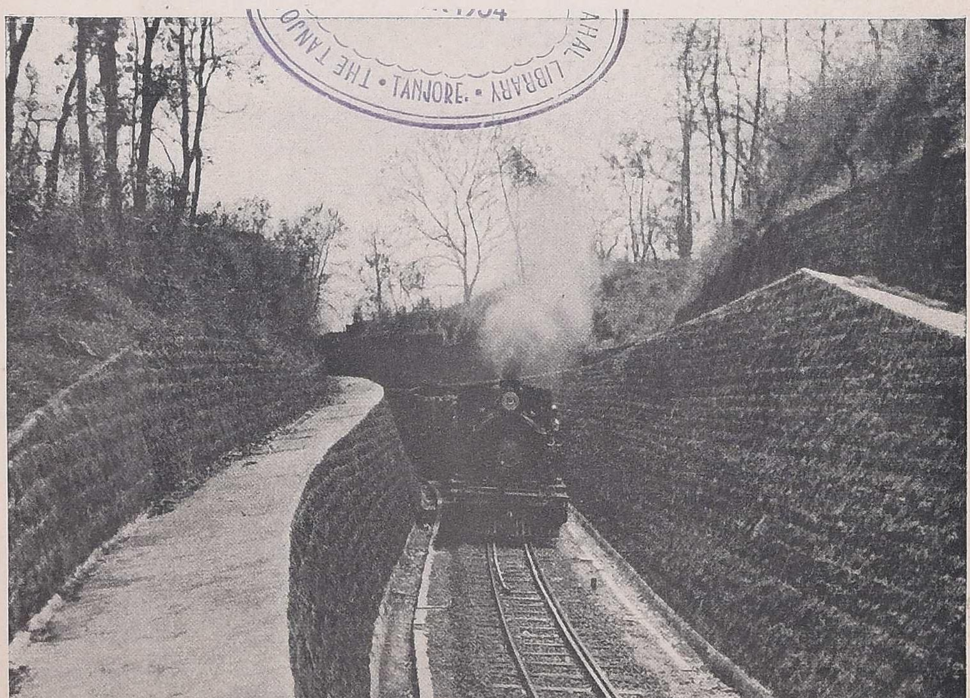
Another major change has been the alteration of the statistical classification of the Indian Railways. Since 1923, Railway Administrations in India have been classified for statistical purposes into Class I, II and III according to different limitations of their gross earnings. After the Federal Financial Integration and the regrouping of railways, all the principal railways have now been integrated into six zonal systems under Government management. The remaining small lines numbering fifteen, operating 756 miles of narrow gauge lines, are operated by non-Government agencies. It has, therefore, been decided that the Indian Railways will henceforth be classified for statistical purposes into:

(1) Government Railways.

(2) Non-government Railways.

The details of the railways falling under each category are shown in appendix D of this volume.

THROUGH THE RUGGED ROCKS—EASTERN RAILWAY



THE CURVE IN SMOKE—EASTERN RAILWAY (NARROW GAUGE)

CHAPTER III

TRANSPORTATION

A.—OPERATING

31. Operating General.—During the year under review, the punctuality of mail and important through passenger trains recorded an appreciable improvement on both the metre and broad gauges. On the metre gauge, the percentage of such trains not losing time increased from 72·5 during the previous year to 77·4, while on the broad gauge the increase was from 74·2 to 77·5.

From 15 May 1952, the weekly *Janata* Express train which was running between Delhi and Bezwada was extended to Madras. On and from 15 May 1952, the daily *Janata* Express which was running between Madras and Calcutta was run between Calcutta and Bezwada only. The daily *Janata* Express train which was running between Erode and Mangalore was extended to Trichinopoly from 1 October 1952.

The demands for the movement of goods continued generally to be in excess of wagon supplies and, therefore, could not in all cases be met currently. Position was particularly difficult in the following cases:—

(*a*) Movements from the North to destinations on the Southern Railway which are subject to quotas owing to the limited capacity over the routes concerned being fully taken up mostly by essential traffic. With the diversion of an appreciable part of loco coal for the Southern Railway by the rail-cum-sea route *via* Calcutta, rail route capacity equivalent to 60 broad gauge wagons a day was released and made available for other goods traffic including public coal.

In addition to certain special measures already taken, others in progress for stepping up the capacity, particularly on the North-East line of the Southern Railway are expected to be completed by the end of the Plan period.

(*b*) Movements *via* break-of-gauge transhipment stations to the Western Railway, *viz.*, Agra East Bank, Sabarmati and Viramgam, which are also subject to limited quotas, the limiting factor being lack of locomotives. New locomotives are on order and a number of them are expected to be delivered by the end of the year.

(*c*) Movements over the Assam Rail Link, the limited capacity of which is not adequate to meet all the demands. In this case also, active measures are being taken to improve the capacity and it is expected that the capacity will be appreciably increased by 1954.

The Board have reiterated the necessity of the running of the maximum number of goods trains to regular daily schedules and stressed the importance of pursuing this matter vigorously to increase the percentage of goods trains scheduled to run on regular daily paths.

32. Transport of coal.—During the year the control and distribution of coal continued as before through the Coal Commissioner's Office under the administrative control of the Ministry of Works, Production and Supply up to 12 May 1952 and thereafter under the control of the Ministry of Production.

There was improvement in the loading of coal from all the major coalfields except Orissa as compared with the previous year. In all about 70,042 more broad gauge wagons were loaded with coal than during the previous year, representing an increase of approximately 5·2 per cent. Of this, 52,987 wagons more were loaded from the Bengal and Bihar coalfields,

representing an increase of 4·76 per cent over the loading in these coalfields during the previous year.

The movement of coal, like that of other essential traffic, was subject to the limitations of availability of rolling stock (wagons and engines), and of the availability of capacity over certain sections, such as to the South, even though rolling stock were available in greater numbers in those sections.

33. Movement of certain commodities by special trains.—Special goods trains continued to be operated to carry specified commodities between certain stations during the year under report. The percentage of the total wagon loads of traffic moved by such special trains on the broad gauge railways increased from 8·71 per cent in 1951-2 to about 9·94 per cent of the total wagon loadings excluding coal and coke and home line stores and material.

34. Volume of traffic handled.—Goods traffic handled during the year as indicated by net ton miles recorded a slight drop of 0·27 per cent to 28,652 million from 28,728 million during 1951-2. Passenger traffic measured in terms of passenger miles decreased during the year 1952-3 from 39,030 million to 35,536 million or by 8·95 per cent. The fluctuations in the passenger and goods traffic handled on the Government Railways are shown in the table below:

VOLUME OF TRAFFIC CARRIED ON GOVERNMENT RAILWAYS, NET TON MILES AND PASSENGER MILES

(Figures in millions)

	1951-2	1952-3	Increase or decrease % over 1951-2
Government Railways—			
Net ton miles*	28,728	**28,652**	—0·27
Passenger miles	39,030	**35,536**	—8·95

* Excludes departmental.

35. Train miles.—The train mileage operated to handle the above traffic during the year was 181·22 million, an increase of 3·51 million or 1·97 per cent over the figure for 1951-2.

TRAIN MILEAGE OPERATED DURING 1952-3 COMPARED WITH 1951-2

(Figures in thousands)

	1951-2	1952-3	Increase or decrease % over 1951-2
Government Railways—			
Passenger (including proportion of mixed)*	104,632	**106,529**	+1·81
Goods (including proportion of mixed) †	73,082	**74,690**	+2·20

* Includes the mileage of trains conveying passengers and of all other traffic booked at coaching rates, empty mileage run by passenger and other coaching stock, the mileage of electric locomotive and electric multiple trains as well as military specials, but excludes departmental trains.

† Includes mileage of electric locomotive trains, but excludes departmental.

Passenger train miles increased during the year by 1·81 per cent to 106·53 million as compared with a decrease of 8·95 per cent in passenger miles. Goods train miles totalled 74·69 million, representing an increase of 2·20 per cent over the figure for the previous year as against a slight drop of 0·27 per cent in the ton mileage. The average freight load of goods trains registered a decrease of 3·70 per cent on the broad gauge but the metre gauge train load was higher by 8·55 per cent as compared with the previous year.

The detailed figures of train miles of Government Railways are shown in statements 17 and 32 of Volume II of this Report.

36. Shunting miles.—Unproductive engine miles, classified under the head 'Other engine mileage', showed, during the year a slight drop as

compared with the previous year from 22·7 per cent to 22·6 per cent of the total engine mileage.

Shunting miles, forming the greater portion of such unproductive mileage, amounted to 15·18 per cent of the total engine miles as against 15·09 per cent during 1951-2. The following table shows the ratio per 100 train miles of passenger and goods shunting miles on Government Railways during 1952-3 as compared with 1951-2. While the metre gauge recorded improvement both in respect of passenger and goods services, the position on the broad gauge deteriorated.

SHUNTING MILEAGE DURING 1951-2 AND 1952-3: GOVERNMENT RAILWAYS

Shunting miles per 100 train miles	1951-2	**1952-3**	Increase or decrease % over 1951-2
Passenger and proportion of mixed—			
Broad gauge	6·13	**6·22**	+1·47
Metre gauge	6·91	**6·73**	—2·60
Goods and proportion of mixed—			
Broad gauge	38·5	**39·0**	+1·30
Metre gauge	41·2	**40·8**	—0·97

Other principal features of passenger and goods train operation of Government Railways during the year have been referred to in the following paragraphs.

37. **Passenger trains.**—It will be seen from the table below that on the broad gauge, passenger train services increased by 1·53 per cent and vehicle miles by 1·10 per cent. The corresponding percentage increases on the metre gauge were 1·92 and 2·06 respectively. Passenger miles, however, decreased by 8·12 per cent on the broad gauge and by 10·9 per cent on the metre gauge. These figures indicate some relief to overcrowding on Government Railways on both the gauges.

STATISTICS OF PASSENGER TRAFFIC: GOVERNMENT RAILWAYS

(Figures in millions)

Particulars	Broad gauge		Increase or decrease % over 1951-2	Metre gauge		Increase or decrease % over 1951-2
	1951-2	**1952-3**		1951-2	**1952-3**	
Passenger miles	26,000·0	**23,889·5**	—8·12	12,458·6	**11,102·0**	—10·9
Coaching vehicle miles (including proportion of mixed)	998·7	**1,009·5**	+1·10	573·4	**585·2**	+2·06
Passenger train miles* (including proportion of mixed)	65·27	**66·26**	+1·53	36·40	**37·10**	+1·92

* Includes the mileage of trains conveying passengers and of all other traffic booked at coaching rates, empty mileage run by passenger and other coaching stock, mileage of electric locomotives and electric multiple unit suburban trains as well as military specials but excludes departmental.

38. **Punctuality of passenger trains.**—Continued improvement in the punctuality of passenger train services including the electric multiple unit suburban trains were maintained on both the broad and metre gauges as compared with the previous year. The following table will show a perceptible improvement in the percentage of passenger trains not losing time to the total number of trains run on all Government Railways during 1952-3 as compared with 1951-2.

PERCENTAGE OF PASSENGER AND MIXED TRAINS NOT LOSING TIME

Year	All trains (inc. elec. multiple unit trains)	Mail and important through trains	Mixed trains	Suburban trains	Other passenger trains
	%	%	%	%	%
Broad gauge—					
1951-2	78.81	74.15	81.16	80.60 82.00*	75.49
1952-3	82.14	77.49	83.90	83.85 84.58*	79.79
Metre gauge—					
1951-2	77.70	72.53	77.56	73.84 95.35†	74.27
1952-3	83.57	77.37	83.83	85.00 98.60†	80.46

* Electric multiple unit trains of the Western and Central Railways.
† Electric multiple unit trains of the Southern Railway.

39. Augmentation of passenger train services.—Efforts to augment the train services for the convenience of passengers were continued during the year. Usually the results of such efforts are reflected in the revised time-tables introduced from 1 April every year. This year, however, to commemorate the Centenary of Indian Railways which fell on 16 April 1953, the revised time-tables were introduced from that date. By 16 April 1953, the passenger train services on Indian Railways expressed in terms of train miles per day, had increased by about 5,564 on the broad gauge and 4,453 on the metre gauge, over those operating on 15 May, 1952.

40. Goods trains.—As compared with the previous year, goods train miles on the broad gauge increased by 1·59 per cent, wagon miles by 2·81 per cent but net ton miles dropped by 2·01 per cent. On the metre gauge, however, there has been an increase of 2·24 per cent in train miles, 4·34 per cent in wagon miles and 11·2 per cent in net ton miles. The table below gives the comparative figures for the year 1951-2 and 1952-3.

TRAIN MILES, TON MILES AND WAGON MILES, GOVERNMENT RAILWAYS DURING 1951-2 AND 1952-3*

(Figures in millions)

—	1951-2	1952-3	Increase or decrease % over 1951-2
Broad gauge—			
Ton miles	24,858.7	24,360.2	—2.01
Wagon miles	2,203.7	2,265.8	+2.81
Train miles—			
Goods (including proportion of mixed)	50.95	51.76	+1.59
Metre gauge—			
Ton miles	3,753.5	4,173.2	+11.2
Wagon miles	629.0	656.3	+4.34
Train miles—			
Goods (including proportion of mixed)	20.05	20.50	+2.24

* Excluded departmental.

41. Goods train speeds.—Speed of goods trains suffered a slight deterioration as compared with the previous year. On the broad gauge, it declined from 10·7 miles per hour in 1951-2 to 10·4 miles in 1952-3. On the metre gauge, it declined from 9·22 to 9·14 during the same period.

42. Goods train loads.—The average net load of goods trains (steam) over the broad gauge decreased by 18 tons from 487 in 1951-2 to 469 in 1952-3 but on metre gauge the net load recorded an increase of 16 tons from 187 in 1951-2 to 203 in 1952-3.

43. Stock usage.—Efforts to improve the power position on Government Railways resulted during the year in an increase in the number of engines employed daily on different services, and the engine usage in terms of total engine miles run generally kept pace with this increase. It will be seen from the figures included in the accompanying table that on the broad gauge as against an increase of 1·36 per cent in the average number of engines in daily use, the total engine miles run increased by 1·37 per cent. On the metre gauge, the total engine miles registered an increase of 1·98 per cent as against an increase of 2·57 per cent in the number of engines in use. The engine user remained at the same level as that during the previous year, *viz.*, 109 on the broad gauge and 104 on the metre gauge.

STOCK USAGE ON GOVERNMENT RAILWAYS

Particulars	Broad gauge 1951-2	Broad gauge 1952-3	Increase or decrease % over 1951-2	Meter gauge 1951-2	Meter gauge 1952-3	Increase or decrease % over 1951-2
Average number of engines in use daily on different services	3,756	**3,807**	+1·36	1,909	**1,958**	+2·57
Total engine miles (in thousands)	149,407	**151,450**	+1·37	72,436	**73,873**	+1·98
Engine miles per day per engine in use	109	**109**	Nil	104	**104**	Nil

44. Engine usage.—Engine miles per day per engine on line (i.e., inclusive of the time under repairs, etc.) registered improvement on the broad gauge from 78 miles in 1951-2 to 80 miles in 1952-3. On the metre gauge, however, it remained unchanged at 75 miles. The percentage of locomotives under or awaiting repairs in Mechanical or Transportation workshops, to the total number on line stood at 18 per cent on the broad gauge, the same as during the previous year but on the metre gauge the percentage increased from 16 in 1951-2 to 17 in 1952-3.

The amount of revenue-earning work done by locomotives expressed by the statistical unit 'net ton miles per goods locomotive day in use/on line' recorded further improvement on the metre gauge but suffered a set back on the broad gauge during the year under review in comparison with the previous year.

STATISTICS OF LOCOMOTIVE USAGE, GOVERNMENT RAILWAYS

—	Net ton miles: Broad gauge: Per goods locomotive day on line	Broad gauge: Per goods locomotive day in use	Metre gauge: Per goods locomotive day on line	Metre gauge: Per goods locomotive day in use
1951-2	19,017	28,501	7,263	11,332
1952-3	**18,634**	**27,518**	**7,745**	**12,066**
Increase or decrease % over 1951-2	—2·01	—3·45	+6·64	+6·48

Details of engine usage are shown in Statement No. 22 of Volume II of this Report.

45. Wagon usage.—During the year, the wagons were hauled on an average of 41·8 miles and 31·4 miles a day on broad and metre gauges respectively as against 40·9 and 32·4 miles respectively during 1951-2, thus indicating increased utilization on broad gauge alone.

The net ton miles moved per wagon day, however, declined from 463 in 1951-2 to 452 in 1952-3 over the broad gauge but on the metre gauge there was an increase from 198 to 204.

The percentage of wagons under or awaiting repairs in Mechanical and Transportation workshops and sick lines to the total goods stock on line recorded a slight increase on the broad gauge from 7·40 per cent in 1951-2

to 7·65 per cent in 1952-3 but on the metre gauge, the percentage has improved from 9·39 to 8·23 per cent.

46. Wagons loaded with 'smalls'.—As compared with the previous year, the 'smalls traffic' declined during 1952-3 on the broad and metre gauges, both in the number of wagons loaded with 'smalls' and as expressed as a percentage to the total traffic.

NUMBER OF WAGONS LOADED WITH 'SMALLS' GOVERNMENT RAILWAYS

—	Number		Increase or decrease % over	Percentage of the total number of wagons loaded	
	1951-2	1952-3	1951-2	1951-2	1952-3
Broad gauge	310,859	**309,540**	—0·42	7·35	**7·05**
Metre gauge	331,346	**292,562**	—11·70	12·71	**11·20**

47. Improvement in marshalling and other yards and their working.—(1) *Central Railway*.—Remodelling of the yard at Mudkhed and the down yard at Itarsi were completed. Additions to goods yard at Secunderabad (B.G.) were also completed.

Remodelling of the yard at Jukehi, improvements to the siding in stores yard at Mettaguda and the remodelling of the passenger yard at Secunderabad for direct reception on 'A' and 'D' Roads were in progress.

(2) *Eastern Railway*.—Marshalling yards at Kharagpur and Kandra were remodelled. Additions and alterations were made to the existing marshalling yard at Moghalsarai. Works for remodelling of Khurda Road yard, Bhadrak yard, Palasa yard, Bijuri yard and provision of additional facilities in the Bilaspur yard and at Dangoaposi were in progress. Works at Sakrigali Ghat were nearing completion. The work for the provision of a new yard at Jugsalai yard, west of Tatanagar station, to deal with coming loads of TISCO was also in progress.

(3) *Northern Railway*.—Goods shed at Bareilly Marshalling yard was extended by five wagon length and line No. 16 of marshalling yard at Rosa was extended and connected with Sugar Factory siding.

Works for the provision of two additional lines in down goods yard and one line in up goods yard at Lucknow station were in progress. Remodelling of Delhi yard is being done to enable simultaneous reception and despatch of goods trains so as to minimise interference to incoming and outgoing engines from Loco shed and to facilitate shunting operations and parcels handling work.

(4) *North Eastern Railway*.—The work of remodelling Gonda Transhipment yard was completed.

(5) *Southern Railway*.—Works for improving transhipment facilities at Guntakal and Tadepalli Tranship shed was in progress.

(6) *Western Railway* (*Metre Gauge*).—Remodelling of the yard at Palanpur was completed and the remodelling of the yard at Abu Road was in progress.

The work of providing additional lines with certain alterations in the existing yard at Surendranagar was also in progress. This was necessary in order to increase the holding capacity of the marshalling yard at Surendranagar station and also to cope with the extra traffic due to famine.

Two extra sidings for marshalling goods trains were provided at Jetalsar to facilitate shunting operations and to remove congestion in the yard.

The work of providing additional lines at Wankaner, which was necessary to expedite the movement of food grains from Navlakhi Port, was completed.

48. Wagon position, broad gauge wagon pool.—The number of public service wagons (in terms of four-wheelers) in use on all Indian Railways in the wagon pool at the end of 1952-3 was 155,335, i.e., 1,911 more than that

at the end of the previous year. The total number of wagons loaded during the year was 4,392,574, recording an increase of 162,156 wagons or 3·83 per cent as compared with the previous year. Demands for wagons exceeded from time to time their availability on most of the Railways.

49. Wagon position, metre gauge wagon pool—

(a) *Northern.*—The number of public service wagons (in terms of four wheelers) in use on all Indian Railways on 31 March 1953, including reconditioned W. D. Stock, was 46,329, i.e., 6,359 wagons more than that at the end of the year 1951-2. The wagon position continued to be difficult as the demands were from time to time in excess of the wagon supply. The total number of wagons loaded during the year was 1,777,797, i.e., an increase of 23,355 or 1·33 per cent, as compared with the previous year.

(b) *Southern.*—The total number of public traffic wagons in use on the metre gauge railways in Southern India on 31 March 1953 was 18,657, i.e., 2,167 wagons more than that at the end of the previous year. The total number of wagons loaded during the year was 835,351, representing a decrease of 17,247 wagons or 2·02 per cent as compared with the previous year. The wagon position continued to be difficult throughout the year.

50. Interchange with Pakistan Railways.—During the year, Indian Railways made over to the Pakistan Railways 49,873 broad gauge wagons including 43,324 loaded wagons. Of the 1,768 metre gauge wagons made over to Pakistan Railways, 825 were loaded. The total number of wagons received from the Pakistan Railways was 49,971 broad gauge including 16,243 loaded and 1,686 metre gauge of which 956 were loaded. On an average the Pakistan Railways were creditor by 1,486 broad gauge and 30 metre gauge wagons daily during the year.

51. Neutral control of examination of wagons at interchange junctions, etc.—The system of Neutral Control Examination of wagons under the Director of Wagon Interchange was in force at the following points:

(i) *Interchange junctions—*

	Broad gauge	*Metre gauge*
	Ajni (Nagpur)	Katihar‡
	Chheoki	Kanpur (CPA)§
	Ghaziabad*	
	Khanalampura*	
	New Delhi	
	Waltair	
	East Dock Junction	
	Kanpur (GMC)	
	Agra Cantt. (from 1 June 1952)	
	Agra East Bank (from 1 June 1952)	
	Gomoh†	
(ii) *Workshops—*	Lillooah	Gorakhpur (from 26 May 1952)
	Jhansi	
	Matunga	
	Parel (Mahalaxmi)	
	Alambagh (from 16 August 1952)	
	Kanchrapara (from 25 August 1952)	
	Kharagpur (from 18 August 1952)	
(iii) *Marshalling Yards—*	Moghalsarai	
	Tondiarpet (from 27 May 1952)	

* Neutral Control has been continued at these points though Ghaziabad and Khanalampura have ceased to be interchange junctions.

† Neutral Control was withdrawn from 5 July 1952 as Gomoh ceased to be an interchange junction.

‡ Neutral Control was withdrawn from 19 April 1952 as Katihar ceased to be an interchange junction.

§ Neutral Control was withdrawn from 15 May 1952 as Kanpur (CPA) ceased to be an interchange junction.

(iv) *Flying Squad*—A flying squad attached to Office of the Director, Wagon Interchange, is engaged in checking up the general condition of goods stock at various important junctions on the different Railways.

52. Coal supply and coal stock position.—The stocks of steam coal on Indian Government Railways which stood at 12·4 days consumption requirements at the beginning of the year, dropped to 11·9 days requirements on 10 April 1952. Thereafter the stock position improved steadily till it reached the level of 21·7 days on 30 November 1952, the highest level reached during the year. Later on there was a set back in the position, and the stocks gradually declined to 19·7 days consumption requirements on 31 January 1953. After that the position, however, started improving again, and the stocks rose gradually to a level of 21·1 days requirements at the end of the year.

Although there was a considerable improvement in the coal stock position of the railways as a whole, the position of the Central (Great Indian Peninsular portion) and Western (Bombay Baroda & Central India portion) Railways remained unsatisfactory almost throughout the year, due to less supplies on account of short loading on allotments and low indents by collieries and also due to quota limitations and imposition of restrictions from time to time.

Consequent on the rationalization of the distribution of coal in order to save transport, which was kept in view in drawing out loco coal programmes, there was a slight reduction in the number of collieries supplying coal to railways.

There was a little improvement in the quality of coal supplied to Railways as a result of the imposition of penalties by Government on collieries resorting to loading of coal below the specified standard.

Although railways had agreed about five years ago to give up the use of metallurgical coking coal provided non-coking coals of equivalent calorific value are made available to them in lieu, the supplies of metallurgical coal to railways were not reduced during the year in view of the total production of metallurgical coal being in excess of the requirements of industries using only metallurgical coal.

53. Withdrawal of first class accommodation from trains.—The decision to abolish first class accommodation on railways was announced by the Minister during the Budget debates of 1952. On 1 October 1952 first class accommodation was withdrawn from most of the branch line trains and some of the less important main line trains, with the result that as against 1,600 trains previously, first class was retained on only 550 trains thereafter.

B.—COMMERCIAL

54. Alterations in rates and fares—

I. *General.*—The policy of removing the inflated mileages for charge on the plain sections, which was started last year, was continued and the inflated mileages for charge over the remaining regrouped railways, namely, the Eastern, Northern and North Eastern Railways, were also removed during the year under review.

II. *Goods.*—The important changes in freight rates during the year are summarized below:

(i) With a view to encouraging the setting up of bone mills in the interior, the following changes in the wagon load scales for crushed bones and raw bones were made:

(a) *Crushed bones.*—The wagon load scale for this commodity was reduced from scale WL/B to the new scale WL/CQ involving reductions varying from 25 to 38 per cent according to distance.

(b) *Raw bones.*—The rates for raw bones were raised from scale WL/C to the level of crushed bones, *viz.*, scale WL/CQ for wagon load movements. This rationalization involved a small increase of about 6 per cent in the rates for raw bones.

(ii) With a view to encouraging movement of bone meal which is used as a fertilizer, the wagon load scale for this commodity was lowered from scale WL/B to scale WL/AR involving reductions varying from 18 to 37 per cent according to distance.

(iii) In pursuance of the decision of the Railway Rates Tribunal, the following changes were made in the classification:

(*a*) the entry "Plate glass S/20" appearing under "Glassware Div. 'A'" was deleted ;

(*b*) the existing heading "Glassware Div. 'B'" was changed as "Glassware Div. 'C'" and entries "Sheet Glass S/20 and Silvered Glass" were deleted from it ;

(*c*) a new heading "Glassware Div. 'B'" with the entry "Glass sheets (Plate or Sheet of thickness 3/16" and above) silvered or unsilvered" at 9 RR was introduced.

(iv) With effect from 1 March 1953, a concessional rate of Rs. 0-4-6 per four-wheeled wagon per mile at owners' risk *plus* full terminals was introduced for dry-cattle and their calves from Calcutta, Bombay and Madras to up-country stations.

(v) Concessional rates at half the basic rates *plus* terminals were granted for gift grains in wagon loads despatched from certain stations to scarcity areas in Madras, Bihar, Bombay, Saurashtra, Cutch, Ajmer, Rajasthan, Madhya Bharat, Punjab and Uttar Pradesh States.

(vi) Concessional rates at half the basic rates *plus* terminals were granted for clothing despatched as gifts for use in the famine affected areas of Madras State.

(vii) To meet the pressing need for fodder in the scarcity areas of Bombay, Punjab, PEPSU, Rajasthan, Saurashtra, Ajmer, Madras and Mysore States, concessional rates for the carriage of fodder or forage were applied for traffic between certain stations.

(viii) The more important changes under particular items over certain individual railways are given below:

(a) *Central Railway*—

Concessional rates for bhoosa on floor area basis from broad gauge stations on the *ex*-Great Indian Peninsula Section were quoted to stations of the *ex*-Eastern Punjab Railway from 1 October 1952 and to stations on the *ex*-East Indian Sections of the Northern and Eastern Railways from 1 January 1953.

(b) *Western Railway*—

(i) With effect from 15 May 1952 the rates, rules and regulations for acceptance, carriage and delivery of goods, parcels and luggage, etc., as applicable over the Western Railway were also applied to the Cutch section ;

(ii) Station to station rates were periodically reviewed, some withdrawn or enhanced. A few new rates were also quoted. Requests from trade and industrial concerns for special facilities for booking and receiving goods and for reduced station to station rates were carefully considered and met with wherever justified.

(c) *Eastern Railway*—

(i) Station to station rates were periodically reviewed and some of the station to station rates quoted for gunnies, aluminium, acid nitric, acid phosphoric, acid sulphuric, iron or steel Div. 'B' ashes and paints, non-dangerous between specific points were cancelled as dead rates ;

(ii) Station to station rates between specific points for rubber or synthetic rubber, iron ore, limestone and dolomite were enhanced ;

(iii) New station to station rates between specified points were introduced for aluminium rolling ingots and rolling slabs, fibres machine

pressed hand or power, fireclay, gypsum, glucose powder, iron or steel Div. A, B and C, jute machine pressed, machinery other than electricals, iron ore, groundnut oil, paints and toilet requisites.

(d) *Southern Railway*—

The special rates for Manganese ore were reviewed and cancelled with effect from 1 December 1952. Special rates for iron ore in local booking were also cancelled and withdrawn from 1 March 1953.

(e) *North Eastern Railway*—

(i) From 1 May 1952 certain special rates for tea, jute and petroleum products that were quoted in adjustment with rates in force by the Indo-Pakistan route were cancelled and withdrawn and ordinary class rates calculated on the revised distance for charge based on actual mileages applied in these cases;

(ii) Special rates were introduced for sugarcane at 0·25 pies per maund per mile from certain stations on Katihar district to Jogbani ;

(iii) With effect from 15 November 1952, the ghat charges in Pandu region were brought to a uniform level of Re. 0-2-9 per maund ;

(iv) With effect from 1 December 1952 standard rules rates and conditions provided in the I. R. C. A. Goods Tariff No. 28 for acceptance, carriage and delivery of goods as applicable over the North Eastern Railway were applied over the Tezpur Balipara Section.

(f) *Northern Railway*—

Station to station rates were quoted for the following:

(i) Boxes, cases, casks, tea chests, wooden, unassembled, with or without fittings from Dehra Dun and Simla to Bombay (Carnac Bridge) or *via* Wadala ;

(ii) Fibres, machine-pressed, hand or power from Shivpui to Raniganj ;

(iii) Gypsum from Jamsar, Kavas and *via* Wagah to Sindri Assisted Siding.

III. *Coaching*—

A. *Passenger fares*—

(i) With a view to attracting people to hill stations, concessional return tickets available for 3 months in Air-Conditioned, First and Second classes at 1½ single journey fares were introduced during the summer of 1952 for the following hill stations from all stations situated at a distance of 75 miles or over:

Simla, Dehra Dun, Pathankot, Kathgodam, Ootacamund, Kodaikanal Road, Abu Road, Coonoor, Darjeeling, Kurseong and Shillong.

This concession was reintroduced during the summer season of 1953 from 1 March 1953 for First, Second and Inter classes only.

(ii) With effect from 1 June 1952, charges for First, Second and Inter class suburban tickets for distances beyond 40 miles were also standardized in the Bombay, Calcutta and Madras suburban areas.

(iii) The basis of charge for the third class suburban season tickets over the Calcutta suburban section was standardized from 1 November 1952 and over the Bombay suburban section from 1 March 1953.

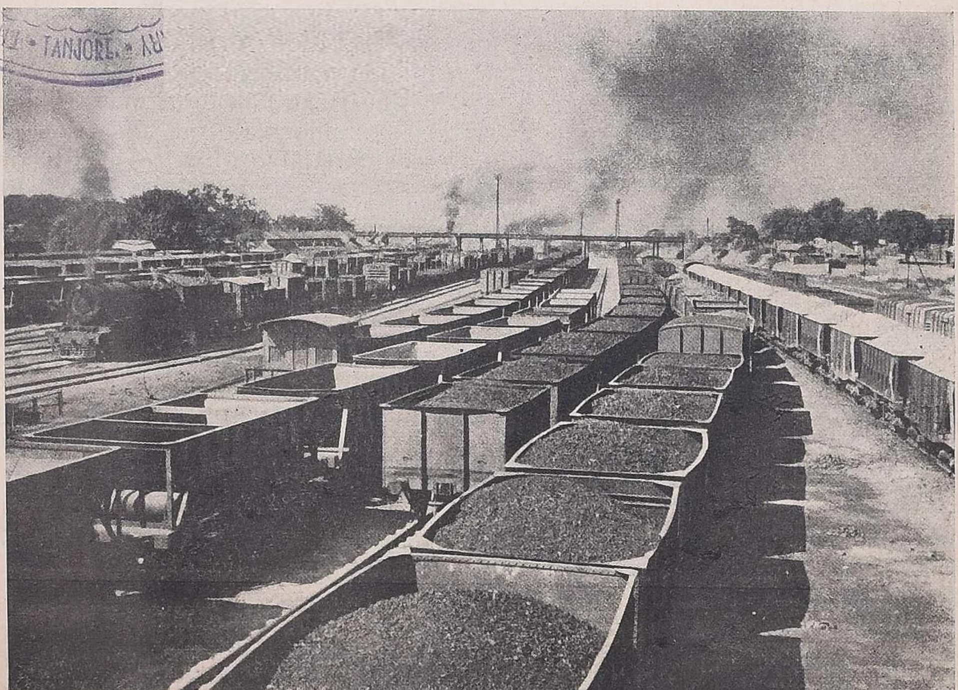
(iv) The more important changes over certain individual railways are given below:

(a) *Central Railway*—

With effect from 1 August 1952, first and third class monthly and quarterly season tickets between stations Sion to Kalyan on the one hand and stations Mahim to Virar on the other (*via* Dadar) were introduced.

Monthly and quarterly season tickets were introduced between Sholapur and Hotgi for (i) third class with effect from 1 September 1952 and for

FOODGRAINS ARRIVE AT VIZAGAPATAM PORT—EASTERN RAILWAY



IRON ORE COMES TO TATAS—EASTERN RAILWAY

(ii) First, Second and Inter classes from 15 October 1952. These tickets are available for journey between the same points by the metre gauge route of the Southern Railway also.

(b) *Northern Railway*—

With effect from 14 April 1952, inter and third class single journey tickets at reduced fares of Rs. 7 and Rs. 4 respectively, were introduced from Simla and Summer Hill to Kalka, Taksal, Gumman, Koti Jabli, Sonwara and Dharampore Punjab and also from Kalka to Simla, Summer Hill, Jutogh, Taradevi, Shoghi, Kathleeghat and Kanoh. These fares were applicable in local booking over the Kalka-Simla section and also in through booking to and from other stations. This concession was withdrawn after 13 July 1952.

(c) *Southern Railway*—

Third class monthly and quarterly Vendor's season tickets were introduced from the following stations to Rajamundry from 15 May 1952:

Navabpalam, Chagillai, Kovvur, Poosivadala Halt.

(d) *Western Railway*—

To encourage pilgrim traffic from Bombay to Khwaja Fair at Ajmer, third class return tickets at $1\frac{1}{2}$ single journey fares were made available from 15 March 1953 to 22 March 1953.

B. *Parcels*—

The concessional rates by passenger trains for handloom products have been extended to handloom cotton listing and durries also.

Northern Railway.—With effect from 16 June 1952 quarter parcels rates were introduced for potatoes booked from Simla, Kandaghat, Shoghi, Salogra and Solan to Dhulkot and Subzimandi at owners' risk. These rates remained in force up to 30 September 1952.

North Eastern Railway.—From 1 October 1952, a special rate of Rs. 5 per maund (State Motor Service Rs. 1-14-0, Railway Rs. 3-2-0) was introduced for potatoes booked as parcels from Shillong Out-Agency to Calcutta *via* Gauhati and Manihari Ghat.

55. Effect of changes in rates and fares—*Goods traffic*.—This was the fourth year in which the revised rates structure introduced with effect from 1 October 1948 operated throughout. There has been no evidence to show that the revised rate structure had an adverse effect on traffic movements. The volume of traffic originating during the year under review was 97,123,000 tons as against 96,660,000 tons during 1951-2. The freight net ton miles during 1952-3 was 28,906 millions as against 28,966 millions during the previous year. The slight decrease in ton miles was attributable to increase in short lead traffic.

Passenger traffic.—The bases of passenger fares remained unchanged during the year under review. There was, however, a decrease in the number of passengers carried from 1,247,314,000 in 1951-2 to 1,204,767,000 in 1952-3 and in the earnings derived from passenger traffic from Rs. 1,09,87,85,000 in 1951-2 to Rs. 1,00,38,38,000 in 1952-3.

56. Efforts to secure better wagon usage and wagon loads.—Efforts to secure better wagon loads continued during the year by giving wagons maximum starting loads and by keeping a watch over the loads given to wagons at transhipment points.

To avoid detention to wagons at weigh bridges lumpsum wagon rates on floor area basis for certain commodities like firewood, grass dry, etc., continued to remain in force over the Eastern and Central Railways.

The minimum maundage of 240 for the supply of broad gauge 4-wheeled wagon and of 160 for the supply of metre gauge 4-wheeled wagon introduced during the year 1951-2 continued during the year under review subject to certain specified exceptions to meet cases of commodities which could not be loaded to that extent.

For want of proper weighment facilities over certain sections of the *ex*-B. N. Zone of the Eastern Railway and to avoid detention to wagons, a cubical capacity formula for determining the loadable heights per wagon in order to arrive at the chargeable weight in respect of iron ore and manganese ore traffic were introduced over the *ex*-B. N. portion of the Eastern Railway.

57. **Coordination of rail-road and water transport**—*Bombay State.*—The Central Government made a further investment of Rs. 49·94 lakhs in the Bombay State Road Transport Corporation during the year 1952-3, bringing the total investment to Rs. 235·81 lakhs.

During 1952-3, the Bombay State Road Transport Corporation made good progress as will be seen from the following figures:

Number of routes operated on 31 March 1953	1,097
Total route mileage	33,941
Average monthly mileage operated	3,758,497
*Total earnings	Rs. 5,84,39,219
Total expenditure	Rs. 5,60,01,712
Profit	Rs. 24,37,507

* Excludes receipt from rent, advertisements, etc., which amount to Rs. 18,000 per month.

A scheme for the transport of parcels traffic was introduced in five divisions, *viz.*, Bombay, Ratnagiri, Nasik, Poona and Belgaum. The parcels traffic of the Bombay State Road Transport Corporation appeared to be on the increase, but it does not seem to have affected Railway traffic to any appreciable extent.

Madhya Pradesh.—The financial results of operation of the two road associated companies in Madhya Pradesh, *viz.*, the Central Province Transport Services, Limited, and Provincial Transport Company were also satisfactory, as may be seen from the following figures relating to the year under review:

Provincial Transport Company, Limited

Vehicle mileage	3,309,337
Income	Rs. 34,73,198
Expenditure	Rs. 29,22,599
Profit	Rs. 5,50,599

Central Province Transport Services

Vehicle mileage	3,689,548
Earnings	Rs. 38,51,579
Expenditure	Rs. 32,84,616
Profit	*Rs. 5,66,963

* Provisional.

Orissa.—The Orissa Road Transport Company in which the Railway have invested Rs. 3 lakhs, earned a profit of Rs. 3,511-14-4. The Board of Directors of the Company did not, however, recommend payment of any dividend, and the profits have been utilized for stabilization of the funds of the Company. The balance in the Profit and Loss Appropriation Account has accordingly been credited to the general reserve.

Other States.—The question of setting up Road Transport Corporations having financial interest of the States as well as the railway, in Madhya Bharat, Kutch, Ajmer, Hyderabad and Saurashtra were under active consideration.

58. **Closer contact with business people.**—Railway administrations continued to maintain close contact with trade, commerce and industry, and informal meetings were held with representatives of chambers of commerce, trade associations and merchants at important centres. Discussions at these

meetings included such subjects as booking and transport facilities, settlement of claims, etc. The contacts with business people afforded a useful means of fostering better relations and understanding between the railways and commercial interests.

59. Claims for compensation and refunds.—During the year, the number of claims disposed of was 365,215 as against 382,638 in 1951-2. The number of claims which remained unsettled on all Indian Railways at the end of the year 1952-3 was 71,149, as against 83,026 at the end of 1951-2, or a reduction of 14 per cent. This improvement was due to less intake of claims during the year. The net amount paid by Railways, during the year, on account of goods lost or damaged was Rs. 3,18,66,922 as against Rs. 2,91,80,867 paid in 1951-2.

The average time taken in the settlement of a claim was 71 days against 72 days during 1951-2.

The number of suits filed and those which remained outstanding at the close of the year were 24,296 and 14,598 respectively as against 27,952 and 13,142 at the end of 1951-2. The reduction in the number of suits filed was brought about as a result of prompt disposal and elimination of infructuous litigation.

The following statements for Indian Railways show for 1952-3:

(*a*) the number of claims received in respect of goods or parcels damaged or lost and of goods and parcels overcharged and the average time taken in their settlement;

(*b*) the number and value of claims in respect of goods or parcels lost or damaged under the main causes;

(*c*) the number of court cases in respect of goods or parcels lost, damaged or delayed and their disposal.

STATEMENT A

Claims received for goods or parcels damaged, lost or overcharged, and the average time for settlement

Item No.	Particulars	Central	Eastern	Northern	North Eastern	Southern	Western	Total all railways
(1)	Number of claims involving compensation for goods or parcels lost, damaged, or delayed, carried over as unsettled at the close of the preceding year	14,037	26,195	12,918	9,378	12,893	7,605	83,026
(2)	Number of claims received (and re-opened) for compensation on account of goods or parcels lost, damaged, or delayed during the current year	65,791	103,811	54,237	36,974	46,529	45,330	352,672
(3)	Number of claims referred to against (items 1 & 2) settled during the year	67,241	105,386	59,834	33,905	49,434	49,415	365,215
(4)	Balance outstanding as unsettled at the close of the year	12,587	25,286	7,321	12,447	9,988	3,520	71,149
(5)	Net amount paid in compensation Rs.	42,25,982	1,33,80,176	38,81,082	36,76,173	20,45,249	46,58,260	3,18,66,922
(6)	Percentage of sum paid in compensation (item 5) to gross earnings	1·47	1·98	0·87	3·29	0·46	1·71	1·42
(7)	Average time taken in settlement of claims shown against items (1) & (2) (days)	85	67	65	65	79	67	71
(8)	Number of applications received for refunds on goods and parcels overcharged	13,781	38,251	30,541	13,596	33,681	19,038	148,888
(9)	Average time taken in settlement of claims shown against item (8) (days)	178	86	45	82	51	85	77

STATEMENT B

Number and Value of Claims Paid

Item No.	Particulars		Central	Eastern	Northern	North Eastern	Southern	Western	Total all railways
(1)	Claims paid on account of goods lost	No.	22,485	11,630	14,027	3,841	7,436	11,428	70,847
		Value (Rs.)	34,48,288	23,60,535	21,66,471	10,03,882	6,92,426	19,03,721	1,15,75,323
(2)	Claims paid on account of goods stolen	No.	*	21,039	5,076	3,902	194	11	30,222
		Value (Rs.)	*	44,59,790	5,54,672	7,30,437	78,036	4,733	58,27,668
(3)	Claims paid on account of goods damaged by wet	No.	4,787	3,879	177	162	286	2,937	12,228
		Value (Rs.)	4,07,761	10,08,339	21,033	37,455	33,811	5,75,052	20,83,451
(4)	Claims paid on account of goods damaged by fire	No.	23	11	355	3	21	10	423
		Value (Rs.)	27,936	15,926	37,412	16,199	24,638	28,388	1,50,499
(5)	Claims paid on account of goods damaged by breakage	No.	277	1,360	1,049	62	144	21	2,913
		Value (Rs.)	38,742	2,88,600	1,13,019	8,466	15,919	2,983	4,67,729
(6)	Claims paid on account of parcels and luggage lost and stolen	No.	3,967	12,469	1,740	4,518	3,202	5,476	31,372
		Value (Rs.)	2,03,792	22,69,615	2,18,197	6,41,464	3,57,919	5,38,210	42,29,197
(7)	Claims paid on account of other causes	No.	6,445	4,907	1,549	4,809	10,089	9,744	37,543
		Value (Rs.)	10,38,480	16,98,095	1,62,580	19,31,594	6,52,040	15,92,089	70,74,878

* Included in item 1.

STATEMENT C

Number of Court Cases in respect of Claims and their Disposal

Item No.	Particulars	Central	Eastern	Northern	North Eastern	Southern	Western	Total all railways
(1)	Number of suits filed in court (or pending from the previous year) for the recovery of compensation in respect of goods or parcels lost, damaged or delayed	2,992	9,548	1,174	6,106	949	3,527	24,296
(2)	Number of such suits settled out of court	974	1,941	321	2,064	304	1,319	6,923
(3)	Number of suits dismissed	220	1,017	47	294	184	391	2,153
(4)	Number of suits decreed	202	468	19	433	40	126	1,288
5	Number of suits pending	1,596	6,788	787	3,315	421	1,691	14,598

60. Special drive for disposal of arrear compensation claims and for prevention of claims.—During the year the number of new claims received and reopened was 352,672 as against 389,428 in 1951-2. Although as a result of the sustained drive initiated by the Railways for the prevention of claims some reduction has been brought about, the crime position in regard to thefts and pilferage of goods on railways continued to cause anxiety.

A retired Director of the Railway Board, was appointed as Officer on Special Duty with the object of investigating the causes of abnormally high compensation claims on Indian Railways. Most of his recommendations were accepted by the Board and Railways were asked to act up to them.

A detailed enquiry on the subject of railway crime was undertaken by the Director, Intelligence Bureau, at the instance of the Ministry of Home Affairs and the Ministry of Railways. Proposals have been finalized by the Director, Intelligence Bureau, in consultation with the Officers of the State Police and Railways and his report is expected shortly.

Some of the more important measures adopted by the Railways for the prevention of claims are given below:

(i) Patrolling of affected areas notorious for running train thefts and yard thefts, and escorting by Railway Protection Police of wagons which carry valuable goods.

(ii) Close liaison between Watch and Ward, Government Railway Police and State Governments.

(iii) Provision of dunnage on despatches in respect of consignments of sugar.

(iv) Periodical observance of "stop rough handling" and "P.L.M." check up weeks to ensure proper packing, labelling and working of packages.

(v) Providing, on programme basis, security measures at stations and yards to prevent theft and removal of goods.

(vi) Intensification of drive to connect consignments in wagon load and smalls lying unconnected at stations and at Lost Property Offices.

(vii) Introduction of Ellis-Patent System of locking of wagons conveying vulnerable commodities between certain selected points on all broad gauge Railways.

(viii) Prompt reference to the Director of Wagon Interchange, Delhi, for information of movement of wagons from foreign railways overdue at destination.

(ix) Forbidding use of hooks in lifting bagged cargo, and the insertion of a special clause in the agreement with handling contractors.

(x) Strict observance of routine and procedural checks by the Inspecting Staff.

(xi) Improved method of loading foodgrains.

61. Ticketless travel.—The usual measures for checking tickets of railway passengers with a view to detecting ticketless passengers were continued to be taken on Railways. In addition, the special arrangements for carrying on intensive drives against ticketless travel with the assistance of the Special Railway Magistrates and the Police were continued in Uttar Pradesh and Bombay as well as on the portions of the Eastern and North-Eastern Railways falling in the State of Bihar.

The number of passengers detected travelling without proper passes or tickets and the amounts realized from them during the year under review were 8,415,088 and Rs. 1,66,68,073, the corresponding figures for the previous year being 7,900,918 and Rs. 1,65,58,180.

62. *Mela* traffic.—Special arrangements, such as increasing loads of normal passenger services, running of special trains, etc., were made as and when warranted to cope with the *mela* rush on the occasion of important fairs held during the year.

63. Measures to ensure civility and assistance on the part of the Railway staff in their dealings with the public.—Railway Administrations continued to pay special attention to this matter. The duty of the Railway staff as public servants to the customers of railways was also impressed on all categories of staff coming into contact with the public. While all complaints of incivility were investigated and appropriate action taken in proved cases, instances of exceptional service or assistance rendered were noticed and encouraged.

64. Measures taken to foster tourist traffic.—The measures taken by the Railway Administrations for the developments of tourist traffic during the year include improvements to the existing retiring rooms at Coimbatore, Bellary, Ootacamund, Amritsar and Mathura, and construction of new retiring rooms at Bareilly, Bangalore City, Sagara, Rameshwaram, Madura, Trichinopoly and Kodaikanal Road. Arrangements were also made to set aside two double rooms and two single rooms in the State Hotel, Aurangabad, for advance booking of accommodation for tourists through tourist agents. The Railway Administration also decided to extend the State Hotel, Aurangabad, by an additional wing consisting of nearly a dozen suites at a cost of Rs. 1,25,000.

Regional Advisory Committees on which Railways were also represented were set up at Bombay, Madras and Calcutta, to assist Regional Tourist Officers in establishing proper relationship with tourist interests concerned, in devising ways and means to bring local transport into better order so far as tourists were concerned, and, generally, in considering measures for the improvement and development of facilities for tourists.

Messrs. Orient Express, New Delhi, and Messrs. G. Raghunath-Mal Bank Ltd., Hyderabad (Deccan), Tourist Agents, were accorded recognition by the Government of India during the current year.

Travel Agents were, as usual, allowed free travel for conductors and concessional travel for their employees while travelling to make advance preparations at tourists centres.

CHAPTER IV

NEW CONSTRUCTIONS AND ENGINEERING WORKS

65. Capital Expenditure.—At the end of March 1953, the total capital-at-charge of all railways, including lines under construction, amounted to Rs. 868·52 crores, of which Rs. 857·38 crores represented the capital-at-charge of the Indian Government Railways, inclusive of the premia paid on the purchase of certain companies' lines. The balance of Rs. 11·14 crores was the capital raised by Indian States, Companies and District Boards.

The figure of capital-at-charge of Indian Government Railways which is provisional, pending closing of the pre-partition accounts and the finalization of the balances brought forward on 1 April 1950 in case of *ex*-States' Railways, comprises the following items:

	£
Liability and debt incurred in the purchase of railways . .	131,164,798
Less liability and debt cancelled by the operation of annuities and sinking funds	23,756,284
Net amount outstanding	107,408,514
	Rs.
Direct expenditure by Government (in thousands)	7,14,16,24
Amount in sterling converted into rupees (in thousands)	1,43,21,58*
GRAND TOTAL .	8,57,37,82

By far the greater portion of this amount, namely, Rs. 8,56,54,35,000 is Government capital and only a sum of Rs. 83,47,000 is owned by District Board.

The total capital outlay on all railways during 1952-3 was Rs. 7·05 †crores.

The distribution of the capital outlay in 1952-3 over the different Indian Government Railways is shown in the following statement:

CAPITAL OUTLAY ON INDIAN GOVERNMENT RAILWAYS DURING 1952-3

(Figures in lakhs of rupees)

Railways	Open lines			New lines			Grand total
	Works, etc.	Rolling-stock	Total	Works, etc.	Rolling-stock	Total	
Central	—36	71	35	..	..	..	35
Eastern	—402	114	—288	4	..	4	—284
Northern (Commercial)	—19	16	—3	..	..	..	—3
Northern (Strategic)	15	10	25	22	..	22	47
North-Eastern	206	49	255	—8	..	—8	247
Southern	44	18	62	2	..	2	64
Western	12	129	141	10	1	11	152
Chittaranjan Locomotive Works	414	..	414	..	..	..	414
Coal Department	—10	..	—10	..	..	..	—10
Integral Coach Factory	48	..	48	..	..	..	48
Railway Board	—5	..	—5	..	..	..	—5
TOTAL	267	407	674	30	1	31	705

* The amounts, £2,575,000, £2,000,000, £1,500,000 and £1,000,000, representing the share capital respectively of the Great Indian Peninsula, the Bombay, Baroda and Central India, the Madras and Southern Maharatta and the South Indian Railways (the first two amounts being paid off during 1925-6 and 1941-2 respectively, and the last two during 1944-5) have been converted at appropriate average rate of exchange for those years and the balance of £100,333,514 at the rate of 1s. 6d. to the rupee.

† The amount of Rs. 7,04,60,000 related to Indian Government Railways and Rs. 79,000 to Non-Government Railways.

66. Mileage of lines opened during 1952-3.—The following lines were opened during the year:

Railway	*Name of line*	*Mileage*
Northern	(i) Mukerian-Pathankot	25·77
	(ii) Bijnor-Chandpur Siau	21·43
Southern	(iii) Sulur-Singanallur Coimbatore Division	8·65
Western	(iv) Gandhidham-Deesa	169·70
	TOTAL	225·55

67. Lines under construction during 1952-3.—A total mileage of 643·30 was under construction during the year:

(a) *New lines*—

Railway	*Nature of Section*	*Mileage*
Central	(i) Kurla-Trombay	4·21
Eastern	(ii) Rajnagar-West Jhagra-Khand	6·02
Northern	(iii) Chunar-Robertsganj	47·80
North-Eastern	(iv) Murliganj-Madhopura	13·80
Southern	(v) Quilon-Ernakulam	96·25*
Western	(vi) Pihij-Nadiad	3·54
	(vii) Gandhidham-Kandla	6·24
	(viii) Diggi-Toda Raisingh	65·22
	TOTAL	243·08

* The section between Ernakulam and Kottayam of 37·25 miles is under construction. For the rest preliminary arrangements are in hand.

(b) *Restoration of dismantled lines.*—Restoration of the lines which were dismantled during the last War and which were under construction during the year are:

Eastern	(i) Bhagalpur-Mandar Hill	31·30
	(ii) Bobbili-Salur	11·16
Northern	(iii) Utraitia-Sultanpur-Jaffrabad	136·46
	(iv) Unao-Madhoganj-Balamau	62·25
	(v) Nagrota-Jogindernagar	35·00
Southern	(vi) Madura-Bodinayaknur	55·94
	(vii) Shoranur-Nilambur	41·50
Western	(viii) Vasad-Kathana	26·61
	TOTAL	400·22

68. Lines closed during 1952-3.—No lines were closed during the year.

69. New surveys.—Surveys aggregating about 546·58 miles were sanctioned during the year. The details of the proposed lines, the nature of the survey, the gauge and the mileage are given below:

Railway	*Nature of Survey*	*Mileage*
Central	(i) Kurla-Bandra Rail Link (B.G.) Preliminary Engineering survey	3·00
	(ii) Kurla-Trombay Arterial siding (B.G.)	5·90
Southern	(iii) Gudur-Renigunta survey for conversion to (B.G.)	52·00
	(iv) Quilon-Ernakulam Final location survey (M.G.)	96·25
Eastern	(v) Gua-Manoharpur, Preliminary engineering and traffic survey (B.G.)	33·00
	(vi) Barabil-Joda, Preliminary engineering and traffic survey (B.G.)	12·00
	(vii) Joda-Koira, Reconnaissance survey (B.G.)	30·00
	(viii) Rourkela-West of Koira, Preliminary engineering and traffic survey (B.G.)	64·00
	(ix) Arang Mahanadi-Dhali-Kajoria, Preliminary engineering and traffic survey (B.G.)	85·00
	(x) Panposh-Gorge, Preliminary survey (B.G.)	5·43
	(xi) Vizianagram-Waltair Doubling, (B.G.)	19·00
Western	(xii) (*a*) Indore-Dewas-Ujjain (B.G.)	48·50
	(*b*) Indore-Dewas-Maski (B.G.)	46·50
	(*c*) Indore-Dewas-Tarana Road (B.G.)	46·00
	TOTAL	546·58

70. Damage caused to railways by floods and cyclones.—The following table gives the extent and character of the more important damages caused by earthquakes, floods and cyclone during the year. The damages were mainly due to heavy rainfall.

Section affected	Character and extent of damage	Date of damage	Duration of interruption to through communication	Total approximate cost of repairs to damages
1	2	3	4	5
				Rs.
	Central Railway			
Secunderabad Dronachellam	Due to heavy floods track between Wanaparti Road and Kurmurti Stations breached.	23-5-1952	24 hours	..
Gwalior-Bhind	Due to heavy rain track between Rethorakalan and Nonera Stations breached.	30-6-1952	4 days	..
Kalyan-Igatpuri	There was a land slide near Tunnel No. 8 at mile 80/3 between Kasar and Igatpuri.	24-7-1952	24 hours	..
	Eastern Railway			
Dhulian Ganges Tildanga	Due to erosion of River Ganges near Dhulian Ganges traffic has had to be stopped. The traffic was resorted on the new diversion between Dhulian Ganges and Tildanga, on 1 January 1953.	17-10-1952	....	35,348
	Northern Railway			
Lhaksar—Dehra Dun Branch—				
Mile 25/12-13 Mile 25/15-16 Mile 25/18-19 Mile 26/5-6	Due to heavy *rain fall* between Raiwala and Kansrao boulders and debris piled up and blocked the bridges Nos. 89, 90, 91, 92 and 94, 69′-6″ above the rails level.	28-6-1952	3-35 hours	3,170
Mile 25/12-13 Mile 25/15-16 Mile 25/18-19 Mile 26/5-6	Due to heavy *rain fall* between Railwala and Kansrao boulders and debris piled up and blocked the 4 bridges at the bridges noted along side.	29-6-1953	Dn 8 hours Up 15 Minutes	2,370
Mile 28/16-17	Due to heavy *rain fall* the upstream left hand guide wall breached for a length of about 100′ beyond the stone pitched guide bund.	2-8-1952	....	2,920
Mile 30/9-10	Boulder pitching of the portion of Hardwar approach of Bridge No. 124 got washed away.	2-8-1952	....	1,300
Mile 30/9-10	Bridge No. 124. Two cracks, one on the Raiwala and abutment just below the upstream bed stone right upto the bed level and the other crack on the junction of this abutment with box type wing walls on the down stream face, were formed.	11-8-1952	....	2,840
Ditto	Northern approach of Bridge No. 121 (7′ × 10′ plate girder) was washed away for a length of about 50 ft.	11-8-1952	....	..
Jind-Panipat, between Madauda and Asan.	Due to heavy continuous rains on 20 and 21 August 1952, the whole area near Asan station was flooded. The water which had collected on the North side of Railway embankment overtopped the bank from mile 30/6 to 37 and 37/5 to 38/2. The line was breached at mile 36/5 for a length of about 50 ft.	22-8-1952	35 hours 5 Minutes	1,000
Rajpura-Bhatinda between Dhuri and Alal.	During the night of 28 May 1952 the right bank of Kotla Branch Canal half a mile on Up stream side of Railway Track opposite mile 53 breached. The water escaping from the breach collected at the railway embankment and overtopped it causing heavy scour on the down stream side of the railway bank, thereby rendering unsafe the passage of trains.	29-5-1952	25 hours	2,000
Luni-Munabae between Parlu and Gole stations.	Extensive breaches occured	..	Between Boltora and Tilwara from 31-7-1952 to 1-8-1952. Between Parlu and Gole 1-8-1952 to 4-8-1952. Between Parlue and Talwara 5-8-1952 to 10-8-1952. Between Babtra and Tilwara 11-8-1952 to 13-8-1952.	..
Samdari-Raniwara Branch	Extensive breaches occurred	..	Between Samdari-Raniwara from 26-7-1952 to 15-8-1952 (except on 28 and 29-7-1952)	1,43,386
	North Eastern Railway			
Lucknow Region—				
Bazpur-Lalkua at Bazpur.	Water over flooded the track	25-8-1952	25-8-1952	Negligible
Pilibhit-Tanakpur At mile 7/1 to 8/1 and 11/11 to 12/10.	Earth bank sank during heavy rains	20-8-1952	20-8-1952	

Section affected	Character and extent of damage	Date of damage	Duration of interruption to through communication	Total approximate cost of repairs to damages
1	2	3	4	5
	North Eastern Railway—contd.			Rs.
Pilibhit-Tanakpur—				
12/10 to 14/10 and 20/14 to 23/3.	Earth bank sank during heavy rains	17-8-1952	17-8-1952	Negligible
26/10 to 27/1 and 34/6 to 35/6.				
26/10 to 27/1 and 34/6 to 35/6.		27-8-1952	27-8-1952	
Muzaffarpur Region—				
Mansi-Koparia	Kosi flood water flowing over the diversions			14,000
Baijanthpur-Methai		4-7-1952	4-7-1952 to 19-10-1952	
Ditto		30-5-1952	....	
Ditto		20-6-1952	20-6-1952 to 17-8-1952	
Ditto		4-9-1952	4-9-1952 to 21-9-1952	
Madhubani-Rajnagar	Flood in river Kamla over flowing the track	24-9-1952	24-9-1952 to 12-10-1952	
Ditto		26-8-1952	26-8-1952 to 3-9-1952	
Ditto		8-9-1952	8-9-1952 to 13-9-1952	
Ditto		16-9-1952	16-9-1952 to 24-9-1952	
Gaunaha-Bhikna Thoree	Due to spate in Pandai river during monsoon	31-5-1952	31-5-1952 to 30-10-1952	
Khajauli-Jaynagar		14-10-1952	....	
Pandu Region—				
Dibrugarh-Saikhao Ghat	Flood water over flowing the track	1-6-1952	1-6-1952 to 5-6-1952	Approximate cost of temporary restoration Rs. 19 lakhs and for permanent restoration Rs. 56·70 lakhs.
		19-6-1952	19-6-1952 to 23-6-1952	
		28-6-1952	28-6-1952 to 5-7-1952	
		7-7-1952	7-7-1952 to 17-7-1952	
		4-8-1952	4-8-1952 to 5-8-1952	
		17-8-1952	17-8-1952 to 18-8-1952	
		23-8-1952	23-8-1952 to 13-9-1952	
		17-9-1952	17-9-1952 to 2-10-1952	
		5-10-1952	5-10-1952 to 8-10-1952	
		9-10-1952	9-10-1952 to 17-10-1952	
		24-10-1952	24-10-1952 to 28-10-1952	
		20-3-1953	20-3-1953 to 24-3-1953	
Chaparmukh-Silghat Town between Jakhalabandha-Silghat Town stations.	.... Heavy floods and slips caused at several places.	17-8-1952	17-8-1952 to 18-8-1952	
Lumding-Badarpur		11-10-1952	11-10-1952 to 20-10-1952	
Siliguri and Amingaon	Flood breaches and land slides and abutment and guide bunds of certain bridges washed away.	12-7-1952	12-7-1952 to 18-8-1952	Approximate cost of temporary restoration Rs. 19 lakhs and for permanent restoration Rs. 56·70 lakhs.
Alipur Duar Jn. Baneswar		12-7-1952	12-7-1952 to 9-8-1952	
Domohani-Lataguri		23-9-1952	23-9-1952 to 22-10-1952	
Rangiya-Rangapara North		12-7-1952	12-7-1952 to 7-8-1952	
Mal Jn. Patgram		12-7-1952	12-7-1952 to 14-8-1952	
Siliguri Jn. Haldibari		1-7-1952	1-7-1952 to 2-7-1952	
Ditto		23-9-1952	23-9-1952 to 24-9-1952	
Domohani-Barnes Ghat		12-7-1952	12-7-1952 to 24-7-1952	
Chunbhati Rangtong		11-8-1952	11-8-1952 to 13-8-1952	
Siliguri Jn. Darjeeling		22-9-1952	22-9-1952 to 2-10-1952	
Siliguri Jn. Kuriseong		22-9-1952	22-9-1952 to 27-9-1952	
Tung Darjeeling		22-9-1952	22-9-1952 to 2-10-1952	
	Southern Railway			
Madras Gudur	Due to heavy rains and floods the temporary arrangement at bridge No. 148, at mile 44/8-9, which was being rebuilt, gave way and the track was found unsafe for traffic.	21-5-1952	3 days	2,800
Guntakal-Bezwada	Due to heavy rains and floods track breached between Panyam and Nandyal and scour occurred at bridges and track at miles 319/4-5, 322/6-17 and 334/18-20.	23-5-1952	Varied from 1½ days to 8 days.	42,700
Bangalore Yeshwantapur	Due to sudden rush of water abutment No. 1 of bridge No. 264 at mile 101/8-9 was undermined and collapsed.	11-7-1952	64 hours	10,000
Bellary-Rayadrug	Due to heavy rain bridge No. 56 at mile 23/10 was flooded with water which overflowed rail level. Three training bunds were washed away.	2-10-1952	25½ Hours	600

Section affected	Character and extent of damage	Date of damage	Duration of interruption to through communication	Total approximate cost of repairs to damages
1	2	3	4	5
	Southern Railway—contd.			Rs.
Bellary Rayadrug	Due to heavy rain water at bridge No. 53 at mile 22/14-15 overtopped the rail level by 6 ft. The bank breached to a length of 70 ft. and to a depth of 6 ft.	13-10-1952	13½ Hours	500
(*a*) Golden Rock-Mayavaram.	Due to severe cyclone accompanied by heavy rain, extensive damages were caused to track, station buildings, staff quarters, goods-shed, platforms etc.	30-11-1952	29 Hours	5,14,000
(*b*) Mayavaram-Arantangi (*c*) Mayavaram Tranquebar (*d*) Peralem-Karaikal (*e*) Tanjore-Nagore (*f*) Thiruthuraipundi-Point Calimere. (*g*) Nidamangalam-Mannargudi.			Ranging from 24 hours to 48 hours.	
Villupuram-Trichinopoly and Trichinopoly–Manamadura	Due to severe cyclone accompanied by heavy rain, extensive damages were caused to track, station buildings, staff quarters, goods-shed, platforms, etc. between Ariyalur and Chettinad.	30-11-1952	39 Hours	1,25,000
Vriddachalam-Cuddalore	Due to heavy and sudden downpour, water overflowed and breached track at mile 154/6-14 for lengths ranging 200 ft. to 750 ft. and to a depth of 8 ft.	7-12-1952	40 hours	6,500
Villupuram Vriddachalam	Due to heavy rain, water overflowed and breached track at mile 105/3-4 and 106/9-12 for about 400 ft. length.	7-12-1952	14 Hours	1,250
Villupuram-Vriddachalam	Due to the breach of Attupattu tank, water overflowed track and scoured the bank at mile 113/0-9.	11-12-1952	....	2,000
	Western Railway			
Mehmadabad-Kanij	Due to heavy rains slopes of approach banks on either side of the Watrak bridge were badly damaged.	27-5-1952	2 Hours	6,000
Virar-Saphala	On account of heavy rains water rose above rail level and rendered tracks unsafe for trains.	25-7-1952	From 7-24 hrs. on 25-7-1952 to 8-40 hrs. on 26-7-1952 *i.e.* 25 hrs. and 16 minutes on Dn line and up to 16-5 hrs. on 25-7-1952, *i.e.* 8 hrs. and 41 minutes on Up line.	9,900
Anand-Godhra	Due to floods in the Mahi river, communication between Sevalia and Timba Road was interrupted.	..	From 13-20 hrs. of 25-7-1952 to 12-30 hrs. of 28-7-1952 and from 20-15 hrs. of 29-7-1952 to 17-30 hrs. of 10-8-1952 *i.e.*, 15 days approximately.	..
Piplod-Limkhera	On account of heavy rains the track from mile 315/13 to 315/18 was breached and communication was interrupted.	25-7-1952	10 Hours	3,000
Piplod-Devagad Baria	Due to floods in Chandri river traffic was interrupted between Piplod and Devagad Baria.	25-7-1952	18 days	20,000
Nadiad-Kapadvanj	Interruption to communication due to heavy floods.	25-7-1952	33 Hours	300
Sayan Section	Due to a heavy cyclone the shed on the island platform was up-rooted and thrown towards the South near the *foot-over* bridge. An outsider was crushed to death.	10-10-1952	About 14 Hours	12,000
Ajmer-Khandwa	Heavy floods changed the course of the river near bridge No. 11 at mile 5/1-2 causing the bed of the river to silt up to 9″ below the girder level; the water then washed away the South embankment causing a gap of 150′ leaving rails and sleepers suspended.	17-7-1952	7 Hours	8,000
Malvi-Barisadri	Due to heavy and abnormal rain, water could not pass through the 2×20′ girder bridge No. 101, 1×3′ dia. hume pipe No. 102 and 1×3′ dia. hume pipe No. 103 and therefore topped the bank near level crossing between mile 47/18 to 47/27 between Bansi Boheda and Bari Sadri causing a 150′ long and 7′ high breach between mile 47/19-20 and a 400′ long and 6′ high breach of the bank between mile 47/23 and mile 47/27.	30-7-1952	2½ days	6,250
Ajmer-Abu Road	Three breaches, 350′, 450′ and 500′ were caused at mile 343/18-21 ,344/16-19 and 347/7-11 respectively due to exceptionally heavy rain fall.	31-7-1952	3½ days	20,000
Kanalus-Gop	Due to heavy rain the line at mile 6/13-15 between Lalpur and Dabasang was washed away in 5 places.	20-7-1952	1½ days	1,705
Rajkot Junction-Viramgam	Due to heavy rain fall, line between miles 59/9-14 and 55/19-24 between Wankaner and Mulli was washed away at certain points.	24-7-1952	About 10 hours	9,000

71. Engineering Works.

Central Railway—

Kalyan Power House Extension.—With a view to make Central and Western Railways self-sufficient as to electrical energy, it was decided to extend the Chola Power House in two phases. The Kalyan Power House Extension was opened by the Minister for Railways on 4 December 1952.

The total estimated cost of extension is Rs. 3·04 crores. After the extension, guaranteed continuous capacity to the extent of 54,000 KW will be available as compared with the original capacity of 20,000 KW before the extension.

Southern Railway—

Creosoting Plant at Coimbatore North.—As the supply of wooden sleepers of durable species is considerably short of the demand for wood sleepers, it has been decided to provide Creosoting Plants on a regional basis in order to increase the field of supplies by making it economical to use after suitable treatment the softer and less durable species of timber which are not at present in much use as railway sleepers. One Creosoting Plant is being set up at Bareilly (Clutterbuckganj) and another plant with a capacity of 150,000 Broad Gauge units per annum in single shift working is to be sited at Coimbatore North.

The work of providing the plant at Coimbatore sanctioned in March 1953, is estimated to cost Rs. 14,47,712.

72. Open Line Improvements.

Central Railway—

Provision of double wire signalling on Jubbulpore-Naini Section—Costing Rs. 9,99,171.—It has been found necessary to provide double wire signalling on this section as the existing interlocking equipment which has been in use for a number of years is in a bad state and considerably worn out. The double wire signalling is not only the most economical but also is the most technically sound system of mechanical signalling. The work was sanctioned on 10 December 1952 and is expected to be completed within two years from the date it is taken in hand.

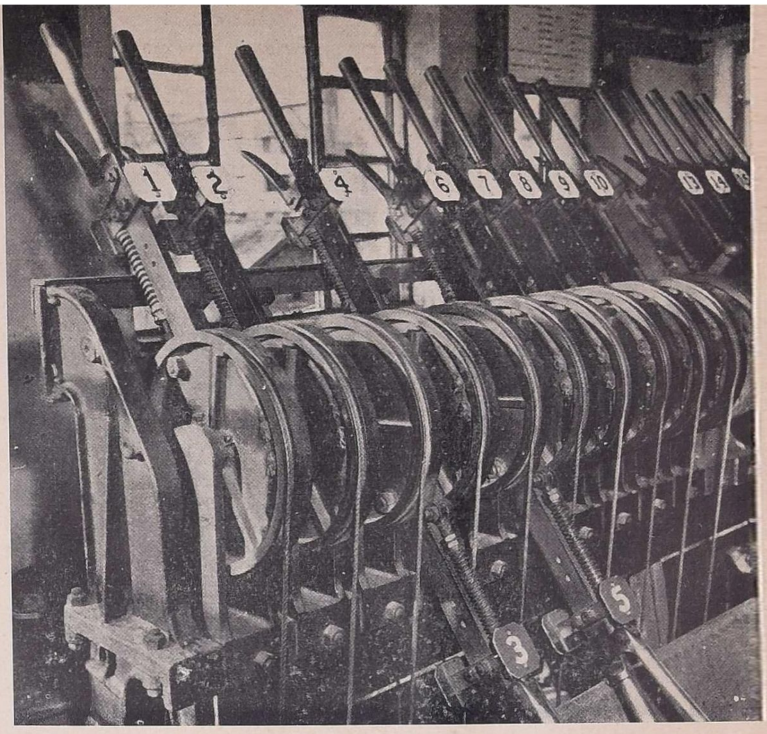
Northern Railway—

Restoration of Nagrota-Jogindernagar line.—The restoration of this 35 mile long portion of the Pathankot-Jogindernagar narrow gauge line which was dismantled during World War II for meeting urgent military demands of track material was approved by the Central Board of Transport and commenced in October 1952. The work is estimated to cost Rs. 44·95 lakhs approximately. The line is expected to be completed and opened to traffic on 26 January 1954.

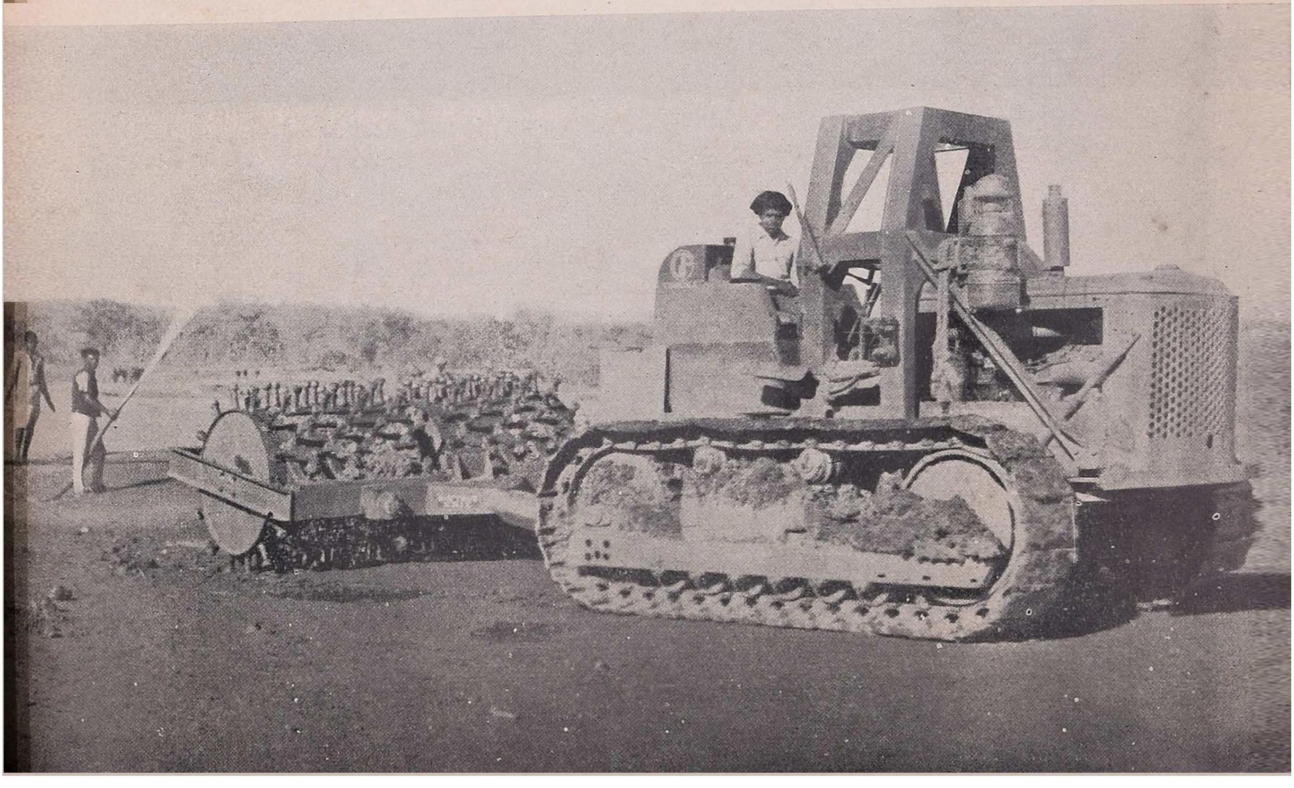
Western Railway—

River Training—Broach protection work to safeguard South approach bank of the bridge over Narbada on National Highway No. 8.—The Narbada river at Broach had been steadily attacking the South Bank from the year 1876 onwards and more strongly from the years 1930-50 during which period about four hundred feet of this bank was cut away. As the measures taken in the past had proved inadequate, it was considered necessary to carry out extensive river training work as early as possible in order to protect the South bank of the Narbada Bridge, from being undermined, as this bridge forms an important link on the broad gauge main line between Bombay and Delhi. In order to carry out these protective works considered absolutely necessary, the Railway Board have sanctioned an abstract estimate amounting to Rs. 29,35,600.

DOUBLE WIRE LEVER FRAME AS USED IN THE NEW INTERLOCKINGS AT GULBARGA ON THE ITARSI-NAGPUR AND KATNI-NAINI SECTIONS—CENTRAL RAILWAY



ROLLING OF HIGH FILLS WITH SHEEPS FOOT ROLLERS ON NEW DOWN MAIN LINE ON BUDNI-BARKHERA SECTION—CENTRAL RAILWAY



Overbridges.—During the year 1952-3 five road overbridges in place of existing level crossings were constructed at:—

Avanashi Road on the Irugur link (Southern Railway)
Patna (Eastern)
Gondia (Eastern)
Gwalior (Central) and
Indore (Western)

73. Important works sanctioned.

North-Eastern Railway—

Expansion of mechanical workshop at Gorakhpur.—With the formation of North-Eastern Railway, the capacity of Gorakhpur Workshop has been found quite inadequate for the periodical overhaul of the rolling-stock of the Railway. The expansion of mechanical workshop at Gorakhpur has, therefore, been sanctioned on 1 April 1952 at an estimated cost of Rs. 1,10,29,291. The work is expected to be completed in three years.

Western Railway—

Remodelling of Carriage and Wagon Workshop at Parel.—As the carriage building and repair workshops of broad gauge system of the *ex*-Bombay, Baroda and Central India Railway at Parel had undergone very little improvement since they were laid out in about the year 1900, it was necessary to remodel them and provide additional lines, buildings, shops and quarters. Accordingly the remodelling of the shops was sanctioned on 10 April 1952 at an estimated cost of Rs. 15,81,000, which was subsequently revised to Rs. 15,62,000 and sanctioned accordingly on 4 November 1952.

74. Bridge strengthening and protection programme.—Details of important items relating to bridges completed or in progress at the close of the year are given below:

Central Railway—

The following bridge works were completed during the year:

(*a*) Miles 375/8 N. E. Line Construction of 5/10′ skew girder bridge in place of 2/10 girder bridge

(*b*) Sanchi-Replacing 1/15′ girder bridge at mile 548/17 with 1/10′-6″-R. C. C. box culvert

(*c*) Secunderabad 'North' Division—Dismantling of cracked bridges Nos. 53, 54 and 62 H. B. line and rebuilding them as girder bridges

(*d*) Secunderabad 'East' Division—Construction of 2/20′ girder bridge at mile 303/6-7, Broad gauge

(*e*) Wadi-Begumpet Section—Provision of guard rails on girder bridges at miles 38, 39 and 53.

The works in progress are:

(*a*) Bhusaval-Nagpur Section—Rebuilding 3/10′ girder bridge at mile 286/1-2 by converting it into a hume pipe culvert

(*b*) Provision of guard rails on bridges on the Secunderabad 'East' Division.

Eastern Railway—

During the year 13 bridges on the Howrah Division, and 47 on the Asansol Division were strengthened. Nine spans of Mand bridge, one span each of Himgir and Kur bridges were strengthened and the work at five spans of Cossye bridge and nine spans of Subarnarekha bridge is in progress. 70 numbers 20 ft. wrought iron duplicate plate spans on the Bengal-Nagpur Section have been replaced by welded type spans with steel trough sleepers.

Northern Railway—

Details of important items relating to bridges completed or in progress at the close of the year are as follows:

(*a*) Three spans of 40 ft. girder bridges in place of 3-20 ft. girder bridge No. 96 at mile 31/1-2 on Lohian Khas-Nakodar Section ;

(*b*) Four spans of 40 ft. skew girder bridge No. 138-A at mile 49/15-16 on Ferozepur Cantonment-Jullundur City Section;

(*c*) Three spans of 20 ft. girder bridge at mile 71 on Ludhiana—Ferozepur Section;

(*d*) Three spans of 20 ft. girder bridge at mile 38/13 on Hussainiwala-Bhatinda Section;

(*e*) Three spans of 30 ft. girder bridge No. 202 at mile 62/11 on Jullundur City—Ferozepur Section.

North-Eastern Railway—

Girders of 38 bridges were renewed (One span of 100′ fourteen spans of 80′, thirteen of 60′ and ten of 30′).—This has been resulted in the removal of restrictions on YP and YG Locomotives over these bridges.

The Elgin bridge consisting of 17 spans of 200′ is being strengthened by providing additional diaphragms in the top boom and strengthening the connections between cross-girder and stringer.

Investigation into the strength of the floor system of the Gundak bridge have been completed; this work will ultimately permit through running of YG Locomotives up to Katihar (there has been a break till now between Hajipur and Sonepore on account of this bridge).

During the year one 60′ span and sixteen 20′ spans were strengthened in the Pandu Region, the latter by welding additional flange plates at site.

Southern Railway—

Central Region (Broad gauge)

The following works were completed during the year:

(*a*) Rebuilding pier No. 3 of bridge No. 148 at mile 44/8-9 between Tada and Sullurpeta;

(*b*) Reconstruction of 5 bridges Nos. 138, 723, 715, 220 and 395 Godavari District.

The more important works in progress are:

(*a*) Converting existing 1-10′ span arch bridge No. E. 211 as 1-10′ span reinforced cement concrete culvert between Noyal and Kodumudi;

(*b*) Strengthening of the abutments of girder bridge No. E 204 between Nayal and Kodumudi;

(*c*) Converting the existing 15′ arch span at Trichinopoly and Erode ends of bridge No. E. 21 as 15′ span reinforced cement concrete slab at mile E 214/17-E. 215/1;

(*d*) Renewing existing 20′—0″ span girders at either end of bridge No. 1149 between Payyanur and Trikarpur ; and

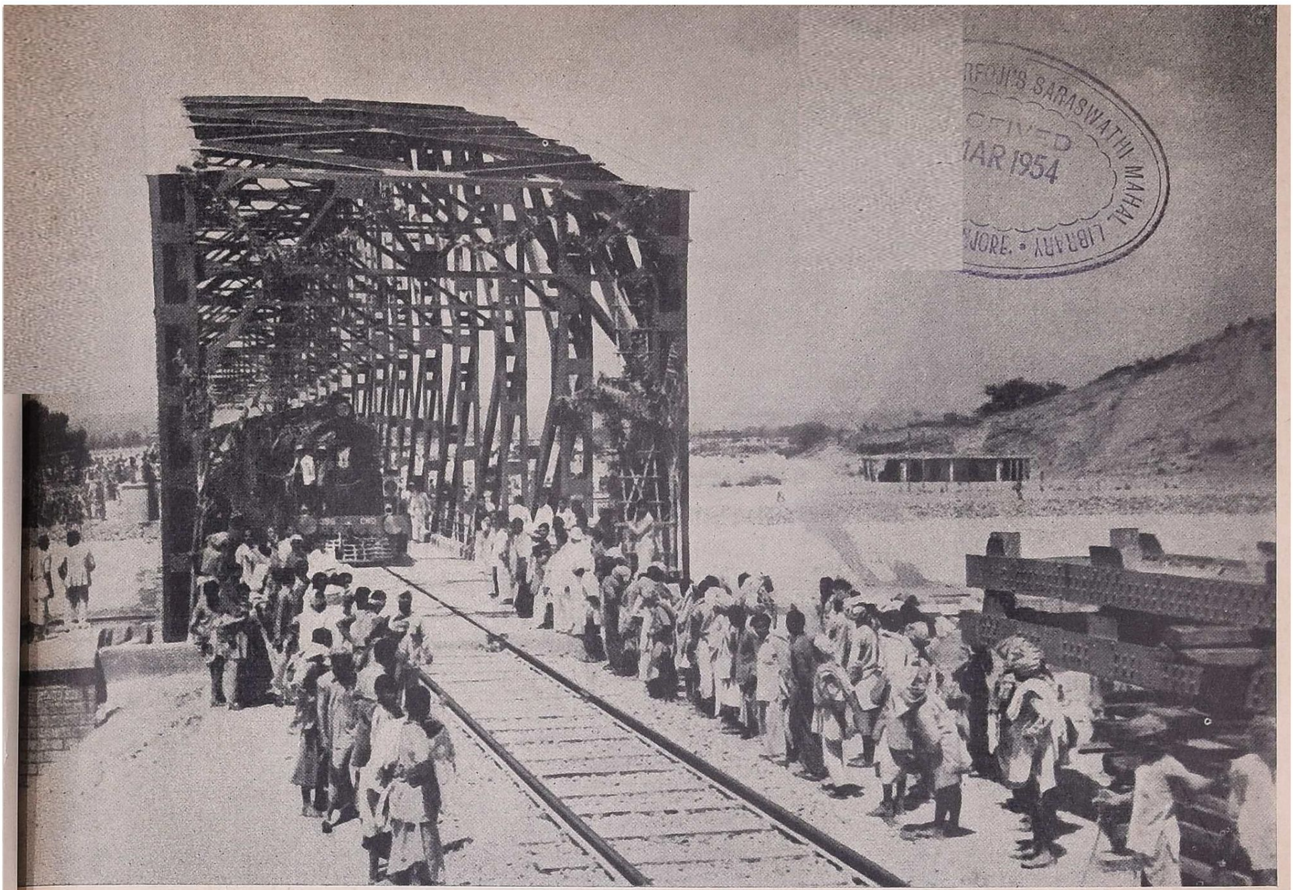
(*e*) Dismantling and partial rebuilding of 1—20′ arch bridge No. E 361 as 1—20′ girder bridge between Pasur and Chavadipalayam.

Northern Region (Metre Gauge)

The following important works are in progress:

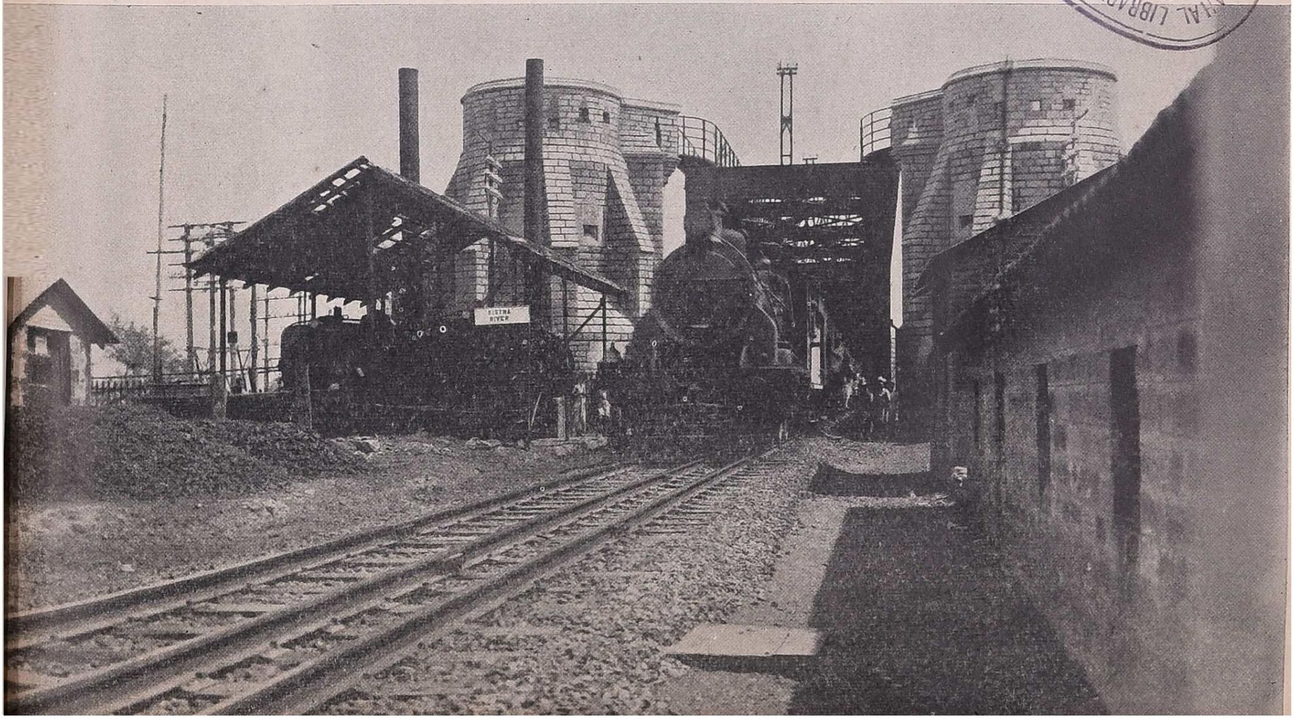
(*a*) Regirdering and strengthening bridges on Pakala Sub-Division;

(*b*) Renewal of bed blocks of bridge No. 975 at mile 67/11-12 between Pakala and Dharmavaram;



Above : ENTHUSIASTIC CROWDS OF VILLAGERS EAGERLY WATCH THE FIRST TRAIN CROSSING THE CHAKKI BRIDGE ON THE PATHANKOT MUKERIAN SECTION OPENED TO TRAFFIC ON 7 APRIL, 1952—NORTHERN RAILWAY

Below : TRAIN PASSING OVER BEZWADA BRIDGE—SOUTHERN RAILWAY



SARASWATHI MAHAL LIBRARY MAR 1954

(c) Proposed 1 × 16′ rail girder at mile 14/4-5 between Sundaram Banchi Siding and Samehalli;

(d) Proposed 1 × 6′ rail girder at mile 17/9-10 between Sundaram Benchi Siding and Samehalli;

(e) Bridge No. 89 at mile 21/14-15 (W.I.P.) between Margao and Chandorgao; and

(f) Bridge No. 103 at mile 27/5-6 (W.I.P.) near Sanvordem. Southern Region (Metre Gauge).

The following important wrks were completed:

(a) Extension to 3—40′ span girder bridge No. 495 (Malattar River) by adding 2—40′ span girders at Serndanur;

(b) Providing 2—20′ span girder bridge No. 100 at mile Q 361/10-11 (Sivakasi section);

(c) Renewal of corroded girders in spans Nos. 141 to 146 (6 × 40′ girders) in bridge No. 346 Paban Viaduct between miles 367/11 and 367/14 (II Instalment);

(d) Provision of Guard rails to bridge No. 383 Cauvery bridge (30 spans of 62′-3″ girders) at mile 205/7-18.

(e) Provision of Man refuges to one bridge and trolly refuges in 4 bridges.

Western Railway—Broad gauge—

Regirdering and reconditioning (including strengthening, if necessary) girders and rebuilding defective substructures of bridges which are at present not strong enough to carry 20 ton axle loads. Under this scheme 15 bridges were completed during the year 1951-2 and 6 bridges during 1952-3. Out of 27 Nos. arch culverts which were programmed to be strengthened by guniting and provision of R. C. C. struts wherever necessary 8 culverts only were strengthened during the year 1951-2; the remaining culverts were strengthened during 1952-3.

14 Nos. 10′ spans were renewed during the year 1951-2, and the remaining one was renewed during the year 1952-3 on the Baroda-Viramgam section, while 3 Nos. 10′ spans were renewed between Bombay and Baroda.

Narbada bridge No. 501—Raising the South abutment groyne and providing an adequate apron as protective measure to safeguard the South aproach during the year 1951-2 experiments had been conducted by the Central Water, Irrigation and Navigation Commission Research station at Poona, in order to find out the most suitable protection works to safeguard both the old and new bridges. During the year 1952-3 the result of the experiments and the approximate costs of the various alternative proposals were scrutinized, and it was decided to raise the groyne above high flood level with an armour of heavy rubble pitching along the slopes and to finish it off with a curved mole head of 600′ radius and provide a boulder pitched apron at the toe for the entire length of the groyne at an estimated cost of Rs. 29·36 lakhs. The cost of the work is to be apportioned between the Railway and the Ministry of Transport.

The work of providing guard rails on 37 major bridges were completed during the year.

Western Railway—Metre gauge—

The work of strengthening bridges on the Palanpur-Deesa section, which was in hand during the year 1951-2, was completed during the year.

Considerable progress was made on the provision of guard rails on major bridges.

Girders of the Gomti bridges 5 × 20′ in the Jamnagar-Okha section were renewed and the speed restriction over the bridge was removed.

Western Railway—Narrow gauge—

Bridge No. 81 was rebuilt as an R. C. C. box culvert on the Dabhoi-Timba Road section.

The cement concrete floor was removed and track was provided on ordinary sleepers on the 9×60′ R. C. C. arch bridge at mile 34 on the Bhavnagar-Mahuva section.

75. Permanent way renewals and welding of rail joints.—The amount provided for track renewal works for 1952-3 was Rs. 14,01·26 lakhs. The details of some of the important works completed or in progress at the close of the year are given below:

North-Eastern Railway—

(a) *Primary Relaying.*—The work of replacing existing 50 lbs. N. S. track on N+2 wood sleepers with new 60 lbs. R. B. S. track on N+3 steel trough sleepers in part of the Sonepore Chupra double line (191·5 to mile 202·0) was undertaken and partly completed.

(b) *Ballasting.*—30·77 miles ballasting of the track between Siliguri Junction and Kishanganj 55·95 miles with stone ballast was completed.

Central Railway—

Poona Division.—Relaying of old and worn 82 lbs. B. H. track on C. I. Pots with 90 lbs. R. F. F. rail partly on C.I.+CST−9 and partly on wooden sleepers between mile 233·35 and 261·50=27·61 track miles, between Kurduwadi and Mohol (Poona Raichur Section) was completed.

Bhusaval Division—

(*a*) Relaying of old and worn 100 lbs. B. H. track on C.I. pot sleepers with 100 lbs. B. H. 33′ cropped rails with 20″ long 'E' type fish plates, fish bolts and nuts on second hand C. I. pot sleepers and Duplex sleepers at joints and new keys on Up road between Jalgaon and Nagardeola from miles 219·45 to 258·77, 38·91 track miles, was completed.

(*b*) Relaying of 100 lbs. B. H. track on C. I. pot sleepers with 100 lbs. B. H. second hand 33′ cropped rails with new 18″ long 'E' type fish plates, new fish bolts and nuts and C. I. Duplex sleepers at joints on Igatpuri-Itarsi section, Up road from miles 312·081 to 337·106 and 352·323 to 352·504, 25·067 track miles, was completed.

(*c*) Relaying of 100 lbs. B. H. track C. I. pot sleepers with 100 lbs. B. H. second hand 33′ cropped rails with new 18″ 'E' type fish plates, new fish plates, new fish bolts and nuts on second hand C. I. pots with new Duplex-cum pot sleepers at joints, Down Road between Dongargaon and Khandwa from miles 336·00 to 349·00 track miles and 352·018 to 352·932, 13·914, track miles was completed.

Nagpur Division—

(a) *Wardha-Balharshah.*—Relaying of old and worn 82 lbs. B. H. track on C. I. pot sleepers with 100 lbs. B. H. 33′ cropped rails with new 18″ 'E' type fish plates, fish bolts and nuts on second hand C. I. pot sleepers and C. I. Duplex sleepers at joints, between miles 516·221 and 553·613, 35·580 track miles was completed.

(b) *Amla-Itarsi.*—Relaying of old and worn 82 lbs. B. H. track on C. I. pot sleepers with second-hand 100 lbs. B. H. 33′ cropped rails with new 18″ 'E' type fish plates, new fish bolts and nuts on second hand C. I. pot sleepers with C. I. Duplex sleepers at joints from miles 463·61 to 503·00, 38·92 track miles (excluding turn outs), 27·39 track miles were relaid during the year. The work is in progress.

Secunderabad (East Division)—

(*a*) Broad Gauge Main line.—Relaying of 85 lbs. FF track with 90 lbs. rails on steel trough sleepers from Hyderabad to Bhongir miles 115·00 to 149·22, 34·22 track miles. 17·65 track miles were relaid last year and 7 track miles were relaid during the year under review. Work in progress.

(*b*) Relaying of 75 lbs. B. H. Rails on C. I. pot sleepers with second-hand 85 lbs. rails on 4 key steel sleepers, 25·75 miles on Dornakal-Bhadrachellam section between miles 260·75 to 278·25 and 286·25 to 294·50. 2 miles were relaid last year and 5·28 track miles were relaid during the year under review. Work in progress.

(*c*) Broad gauge Main line.—Relaying of 85 lbs. track with 90 lbs. rails on CST-9 plate sleepers from miles 152 to 162/1, B.G. 10 track miles. Nine track miles were relaid during the year under review. The work is in progress.

Western Railway—

(i) *Bombay-Baroda Section.*—Relaying of 47·34 miles of 90 lbs. B. S. rail and cast iron pot sleepers (n plus 1 standard) on the Up line with 90 lbs. R. B. S. rail welded in panels of five rails laid on steel trough sleepers (n plus 4 standard) was taken in hand. Out of this, 14·43 miles between Bilimora and Navsari were completed during the year and the remaining work was in progress.

(ii) *Vyara Nandurbar Section.*—Relaying of 64·5 miles of 70 lbs. FF Rails on wooden sleepers with cropped 90 R. B. S. rails and new Canadian 90 lbs. R. B. S. rails welded in panels of five and two rail lengths and laid on new CST. 9 sleepers (n plus 2 standard) was taken in hand.

(iii) *Deesa-Palanpur Section.*—The work of relaying 17 miles of 41¼ lbs. rails with 51 lbs. R. B. S rails on new steel trough sleepers was completed.

(iv) *Ajmer-Lambia Section.*—Out of the 66 miles of 50 lbs. N. S. rails that had to be relayed with 50 R rails on steel sleepers, 17 miles were completed.

Southern Railway—

(i) *Central Region*—

(*a*) Relaying 9 miles with 90 lbs. 'R' F. F. rails on C. S. T./9 sleepers in lieu of existing 80 lbs. B. H. rails on C. I. pots from mile 218/1 to 219/1.

South-West Line.—The work was completed except at points and crossing and level crossings.

(*b*) Relaying with 90 lbs. R. F. F. rails on C. S. T/9 sleepers for 14 miles on North West Line from mile 240 to 226/Relaying completed except laying of points and crossings and provision of stone ballast.

(*c*) Relaying with 90 lbs. R. F. F. rails on C. S. T./9 sleepers for 40 miles on North-West Line from mile 226 to 186 Relaying from mile 205/4 to 212/5 done excluding points and crossings in Kondapuram yard.

(ii) *Northern Region*—

(*a*) Gadag Sholapur Branch.—Relaying with 50 lbs. 'R' F. F. rails on wooden sleepers in lieu of existing 41¼ lbs. rails on steel sleepers for 3rd 45 miles (43·70 miles Main Line and 1·3 miles loops) from mile 87·25 to 130·95 completed. Ballasting in progress.

(*b*) Relaying with 50 lbs. A. S. C. E. rails on wooden sleepers in lieu of existing 41¼ lbs. rails on steels sleepers for 4th 47 miles from mile 130·95 to 176·55/18 miles completed upto 1951-2. The remaining length completed this year (1953). Ballasting in progress.

(*c*) Pakala Gudur Section.—Relaying with 50 lbs. 'R' F. F. rails 42 ft. long on wooden sleepers in lieu of 41¼ lbs. 'R' F. F. rails on steel sleepers for 11 miles from miles 179/4 and 190/4 between Akkurti and Kalahasti completed.

(*d*) Pakala-Katpadi.—Relaying with 50 lbs. 'R' F. F. rails on steel sleepers in lieu of 41¼ lbs. rails for 39 miles between Pakala-Katpadi rerailing completed. Fixing level crossings and ballasting in progress.

(iii) *Central Region*—

14 miles from mile 240 to 226 on the North-West line were relaid except Points and Crossings in Juturu and Tadpatri Yards.

(iv) *Southern Region*—

11 miles relaying from mile L. 344/14½ to L. 255/12-13 between Pollachi and Kinattukkadavu work completed (9 miles completed in 1951-2, 2 miles completed in 1952-3).

Eastern Railway—

(i) *Asansol Division.*—Primary relaying on Grand Chord with 90 lbs. 'R' rails and CST/9 sleepers (N+3+D) releasing 100 lbs. D. H. rails=28·19 miles. 16·25 miles were relaid during the year 1952-3.

(ii) *Howrah Division.*—Secondary relaying B. B. Loop from mile 25·12 to 50·12 equal 25·00 miles with 88½ lbs. S.H. rail and D.O. sleepers N+2+D from Allahabad Division releasing 75 lbs. D. H. rails (1822-1910) and D. O. sleepers N+2.

(iii) 20·0 miles of 41 lb. rails on wooden sleepers with 50 R new rails on existing sleepers between Nainpur and Howbagh and Nainpur-Chhindwara.

(iv) *Sealdah Division.*—Resleepering Branch Line with steel trough sleepers with all fittings (23·50 miles).

(v) 11·0 miles of CI plate sleepers with CI CST/9 plate sleepers between Galudih-Tata on Bombay Main line. The work was completed during the year.

(vi) *Sealdah Division.*—Resleepering Main Line Up and Down lines with new wooden sleepers including dog-spikes (21·64 miles).

(vii) 6·473 miles of 75 BN steel trough sleepers with steel sleepers between Gorumahisani-Onlajuri on Tata-Gorumahisani section. The work was completed during the year.

Welding of Rails joints—

Northern Railway—

6,274 joints were welded at the Flash Butt-Welding Plant, Rosa, for track between Shahjahanpur-Lucknow on Lucknow-Moradabad Down Main line.

Central Railway—

746 rail joints on a length of 3·55 miles of track on the Methura-Delhi section were welded by contract by the Secheran Process.

76. Wireless communication on Railways.—The regrouping of Railways has brought about many changes in the wireless circuits on Railways. The wireless installations on Railways have now been so grouped that on one side all important junction stations and transhipment termini are directly connected to their respective District/Divisional headquarters and these in turn are connected with their respective Regional headquarters. On the other side all the General headquarters of Railways are interconnected and each General headquarter is directly connected to its Regional headquarters. Thus it is now possible for information of importance to be communicated from the remotest corners of a railway to the Railway headquarters or if necessity arises, to the Railway Board and *vice versa* with the minimum of delay.

The special features of the year is the introduction of Duplex R. T. system between Victoria Terminus and Secunderabad, Nagpur and Secunderabad and Victoria Terminus and Jhansi on Central Railway and between Ajmer and Dhow and Bombay, Gondal and Ajmer on Western Railway. This system was well used during the year under review and proved very satisfactory.

Another new feature of the year is the installation of Transmitting and Receiving Station in the Annual Inspection Specials on Eastern, North-Eastern and Western Railways. This has proved extremely useful as throughout the whole period it was possible to maintain contact with all the fixed Railway wireless stations in the area.

A few low power wireless sets have also been installed on various stations on railways in order to cope with the increased telegraph traffic on certain sections.

77. Improvements to Line Tele-communications on Railways.—With the completion of regrouping of Indian Railways the Signalling and Tele-communications which previously functioned under different Departments of different Railways have been combined and constituted into a separate department under a Chief Signal and Tele-communication Engineer on each Railway. This re-organization has improved the efficiency of the tele-communication (line) work on Railways. On many sections old and worn out train control equipments have been replaced by new and the latest type of equipments, and this has improved the speech efficiency of the circuits to a great extent.

To meet the requirements of the increased telegraph traffic, the demand for additional channels have been partly met by super-imposing various telegraph circuits during the year on various railway administrative trunk wires and partly by employing valve relays. This arrangement dispensed with the need for additional lines and consequent extra expenditure and delay in bringing the circuits into operation. In addition to above the following new administrative telephone circuits or the changes in the existing circuits have also been made during the year in order to meet the increased telegraph traffic :

Eastern Railway.—One direct administrative trunk telephone link has been provided between Adra and Asansol Railway Exchanges. Two of the four administrative trunk lines existing between Kharagpur and Kidderpore have been diverted to Fairlie Place Exchange.

The number of direct lines between Kidderpore and Fairlie Place and Howrah Railway Exchanges have been increased by 3 and 1 respectively.

Northern Railway.—Delhi-Kanpur-Allahabad administrative circuit has been provided on a part time basis between 22 and 11 hours.

Southern Railway.—An Administrative trunk channel has been provided between Hubli and Bangalore,

To relieve the congestion on the Mysore-Bangalore trunk lines, a carrier channel between Hubli and Bangalore has been provided from July 1953.

In order to overcome the scarcity of direct telephone lines from the Post and Telegraph Exchanges in Delhi, two 100 line public telephone exchanges (PBX) have been provided on the Northern Railway in Divisional Superintendent's Office and Baroda House, New Delhi. A few C. B. exchanges in replacement of the old magneto and lower capacity exchanges have been installed in certain important stations of various railways during the year.

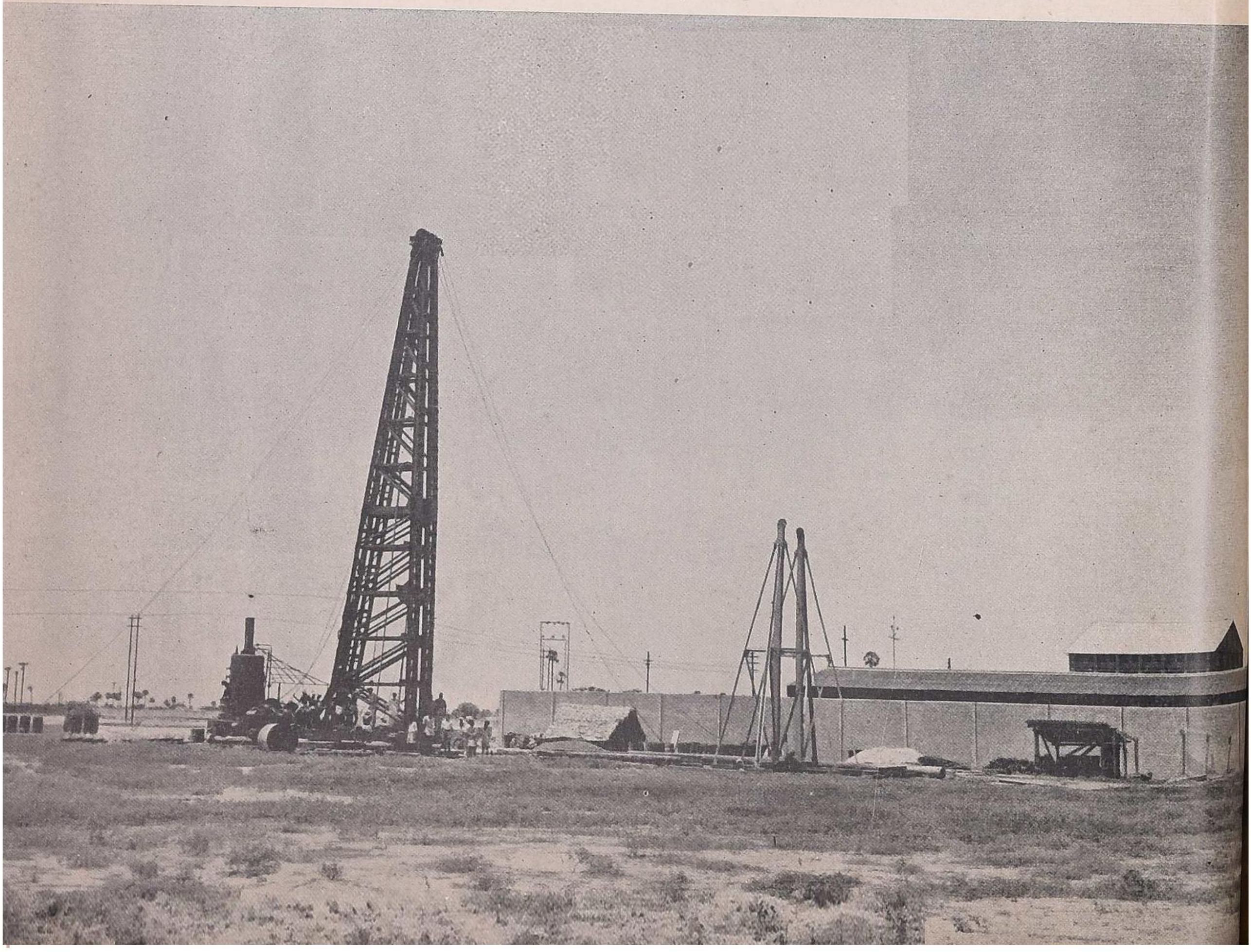
The work of providing all mail and express trains, running in controlled sections, with portable type telephones in order to establish communication with the control office by tapping the control lines in emergencies or accidents has been completed. The scheme to provide these telephones also on important passenger trains is in hand.

A number of flag stations on control sections on various railways have been provided with control telephones in order to have communication with the adjacent block stations.

At some important stations, public address equipments have been installed to relay information to the travelling public about the arrival and departure of the trains.

Above: NEW COVERED PLATFORM UNDER CONSTRUCTION AT SONEPUR—NORTH-EASTERN RAILWAY

Below: GENERAL VIEW OF THE WORKSHOP SITE OF INTEGRAL COACH FACTORY, PERAMBUR, WITH WOR ON PILE FOUNDATIONS IN PROGRESS. THE CONSTRUCTION WORKSHOP AND THE PERMANENT BOUNDAR WALL ARE SEEN IN THE BACKGROUND



CHAPTER V

MECHANICAL AND ELECTRICAL ENGINEERING AND ROLLING-STOCK

78. Renewals and additions to equipment—

Locomotives.—The number of new standard locomotives ordered and placed on line during the years is as follows:

	Broad gauge	Metre gauge	Narrow gauge
Number ordered	140	70	15
Number placed on line	54	136	18

Out of the 140 broad gauge locomotives, an order for 50 WG class standard goods locomotives was placed on the Chittaranjan Locomotive Works and the remaining 80 WG class goods locomotives and 10 Diesel shunting locomotives were ordered from abroad. Out of the 70 metre gauge locomotives, 50 YP class standard main line passenger locomotives were ordered on Tata Locomotive and Engineering Company. The remaining 20 Diesel General purpose metre gauge locomotives and 15 narrow gauge locomotives (10 goods and 5 passenger) were ordered from abroad.

Coaching Stock.—(a) Apart from utilizing all the available carriage building capacity in railway workshops orders were placed on manufacturers for the supply of 150 broad gauge and 236 metre gauge coaching vehicles. The distribution of the orders were as follows:

(Figures in units)

	Broad gauge	*Metre gauge*
Hindustan Aircraft Ltd., Bangalore—		
All steel passenger coaches (III Class)	150	—
Firms abroad—		
Electric multiple stock	—	24
Unfurnished coaches	—	200
Rail cars and trailers	—	12

(b) 585 broad gauge and 310 metre gauge coaching vehicles were placed on line, details of which are as follows:

(Figures in units)

	Broad gauge	*Metre gauge*
Manufactured in railway workshops—		
Passenger coaches: Air-conditioned	21	—
Passenger coaches: Upper class	80	13
Passenger coaches: Lower class	76	130
Other coaching vehicles	49	124
	226	267
Manufactured by Hindustan Aircraft Ltd.—		
All-steel passenger coaches (Class III)	129	—
Constructed by Indian Wagon manufacturers—		
All-steel passenger coaches (Class III) furnished in Eastern railway workshops	41	—
Motor and parcel vans	128	—
	524	—
Imported—		
Electric multiple-unit coaches for Bombay suburban traffic	16	—
All-steel coaches of integral design from Switzerland	45	—
All-steel coaches *ex*-Germany	—	43
	61	43

Goods stock.—The number of wagons, ordered and placed on line during the year is given below:

(Figures in terms of 4-wheelers)

	Broad gauge	Metre gauge	Narrow gauge
Number ordered	6,190	4,540	132
Number placed on line	4,664	9,258	516

The orders included 5,400 broad gauge, 4,000 metre gauge and 88 narrow gauge general service wagons, 50 broad gauge and 240 metre gauge tank wagons and 1,084 broad, metre and narrow gauge special types of wagons.

The requirements of wagons have been in excess of the indigenous manufacturing capacity. Orders to the extent of 4,272 wagons were, therefore, placed abroad to supplement the supplies from indigenous sources.

79. **Locomotives.**—The average tractive effort per steam locomotive on Government Railways during 1952-3 records, as compared with 1951-2, an increase on both broad and metre gauges. The average tractive effort for diesel-electric locomotives and electric locomotives on the broad gauge remained the same as during last year. On the metre gauge, the average tractive effort for electric locomotives remained the same as during last year, but in respect of diesel-electric locomotives it was 7,420 lbs. this year as against nil during the last year. The detailed figures for the different classes of locomotives are shown in the following table:

AVERAGE TRACTIVE EFFORT PER ENGINE IN LBS.

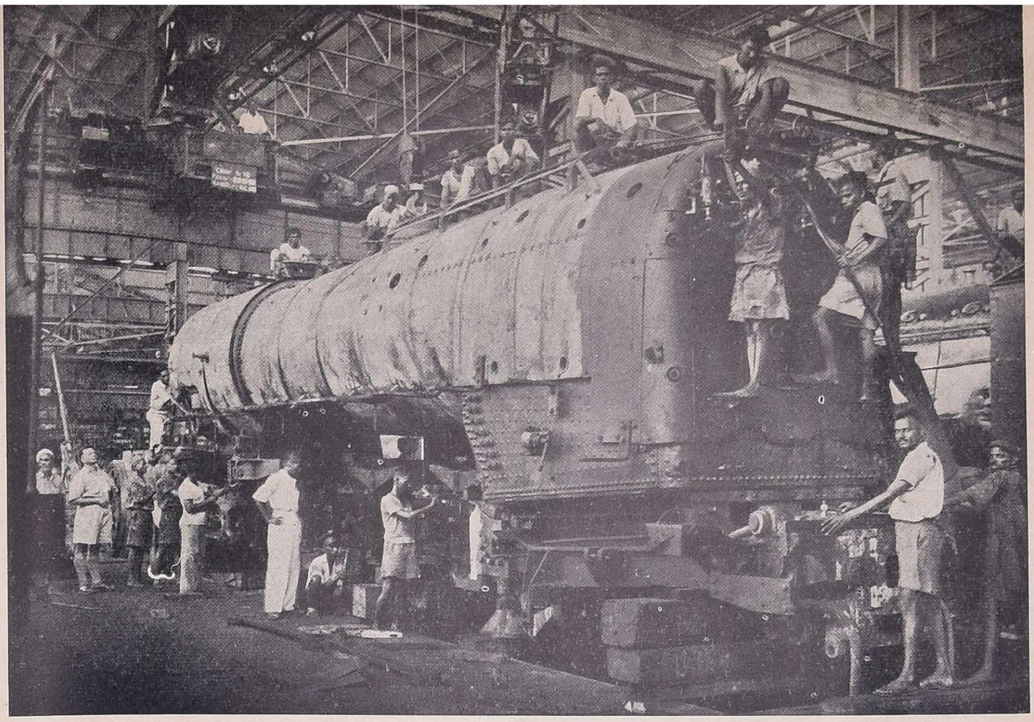
Locomotives	Broad gauge		Metre gauge	
	1951-2	**1952-3**	1951-2	**1952-3**
Steam (including Sentinel and Clayton types)	28,552	**28,616**	16,265	**16,483**
Diesel-electric	26,965	**26,965**	—	**7,420**
Electric	31,015	**31,015**	10,400	**10,400**

80. **Manufacture of boilers and locomotives in India.**—A third order of 50 WG class standard broad gauge goods locomotives was placed on the Chittaranjan Locomotive Works during the year in continuation of the first two orders of 100 and 107 WG class goods locomotives respectively. During the year, Chittaranjan Locomotive Works manufactured 33 WG locomotives, thus completing 57 against the first order of 100 locomotives. There has been a further increase in the percentage of components produced at Chittaranjan rising to an average of 70 per cent in the later stages. All processes of manufacture including boiler making, cylinder casting and machining, fabrication of wheel assemblies, etc., have been established. During the year under review Chittaranjan Locomotive Works turned out 11 WG boilers.

An order for 50 YP class passenger locomotives was placed on Messrs. Tata Locomotive and Engineering Co., during the year. The total outstandings on 31 March 1952 against the previous orders of 100 locomotives (50 goods and 50 passenger) on the firm were 90, out of which 30 locomotives were delivered during the year.

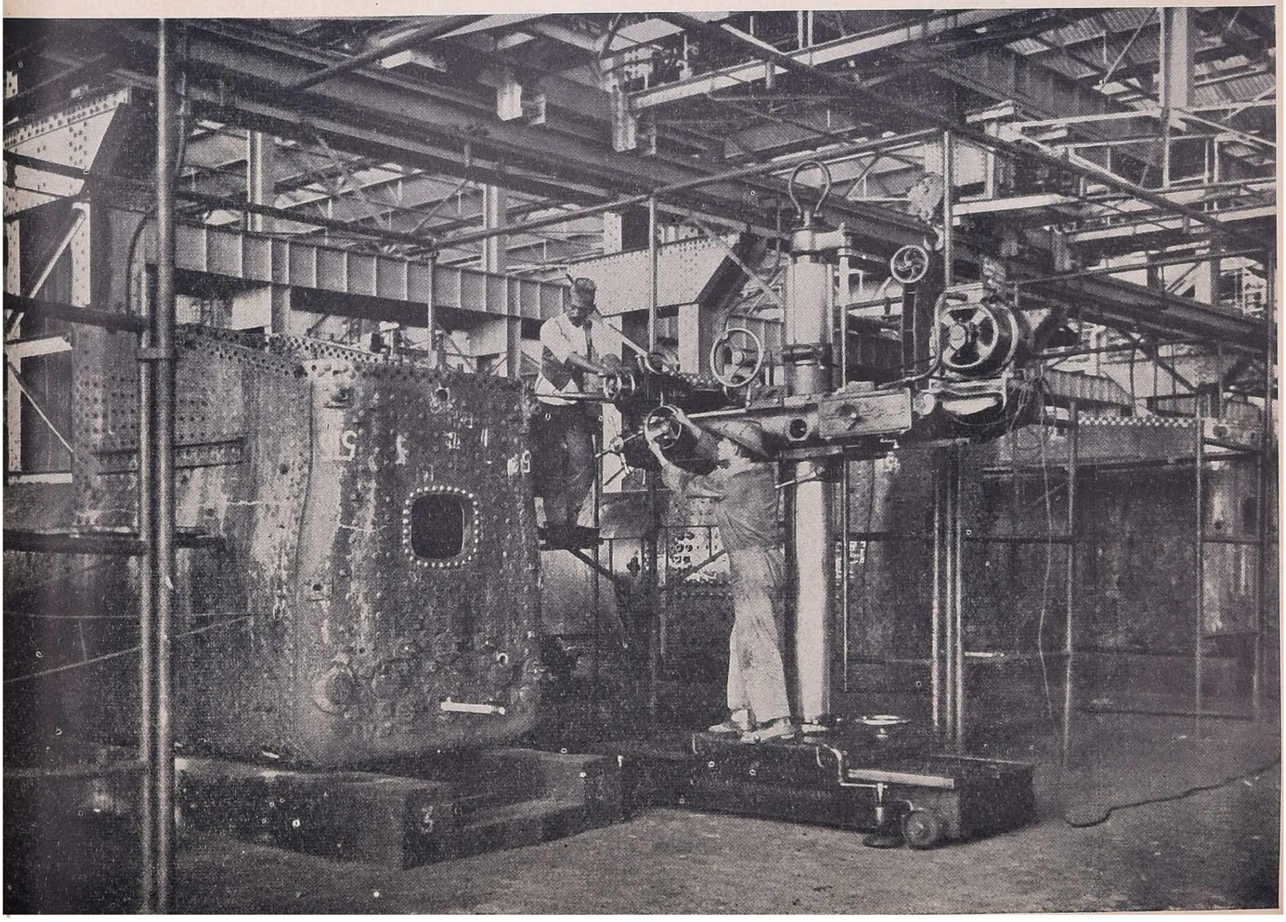
A new order for 71 boilers was placed on Tata Locomotive and Engineering Co., during the year. The outstandings on 31 March 1952 against the previous orders on the firm amounted to 140, out of which 30 boilers were delivered in the course of the year.

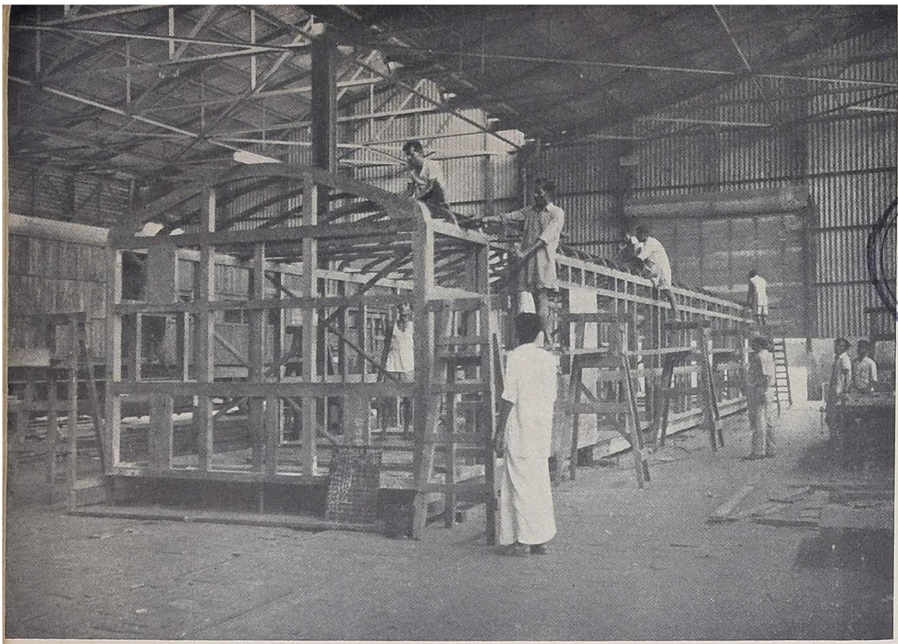
An educational order for 10 MAWD class boilers was placed on Textile Machinery Corporation, Calcutta, during the year.



Above : LATEST TYPE 4-6-2 'WP' LOCOMOTIVE UNDER PERIODICAL REPAIRS IN LOCO WORKSHOPS, PERAMBUR—SOUTHERN RAILWAY

Below : INSIDE THE BOILER SHOP OF THE DOHAD WORKSHOPS—WESTERN RAILWAY—MEN AT WORK





CONSTRUCTION OF FIRST B. G. AIR-CONDITIONED COACH IN CARRIAGE WORKS, PERAMBUR—SOUTHERN RAILWAY, FOUR OF WHICH ARE TO BE BUILT IN THE 1952-3 PROGRAMME

AIR-CONDITIONED COACHES UNDER CONSTRUCTION IN MATUNGA WORKSHOPS—CENTRAL RAILWAY

AN INSIDE VIEW OF THE RAILWAY WORKSHOP UNDER CONSTRUCTION AT JAGADHRI—NORTHERN RAILWAY

81. Repairs to locomotives in railway workshops and running sheds.—As compared with 1951-2 the number of engines under or awaiting repairs in workshops and running sheds registered a slight increase in the year as shown by the figures summarized in the following table :

AVERAGE NUMBER OF LOCOMOTIVES UNDER OR AWAITING REPAIRS

Gauge	Year	In Mechanical Workshops		In Sheds and Transportation Shops	
		Number	Percentage to average total No. on line	Number	Percentage to average total No. on line
Broad gauge (Steam)	1951-2	249	4·76	707	13·5
	1952-3	**261**	**5·01**	**670**	**12·9**
Metre gauge (Steam)	1951-2*	164	6·20	255	9·64
	1952-3	**183**	**6·79**	**277**	**10·3**
Narrow gauge	1951-2	29	9·45*	40	13·0*
	1952-3	**35**	**9·80**	**55**	**15·4**

* Revised figures

The increase to some extent was due to cracked cylinders on WG engines due to which some engines had to be withdrawn from service for renewal of cylinders or repairs to the cracked cylinders.

82. Rationalization of workshop capacity.—The Northern Railway and the Assam section of the North Eastern Railway who are deficient in workshop capacity continued to receive assistance from other railways in respect of repairs to their rolling-stock. With a view to reducing the load on the assisting railways, further steps were taken to create capacity for repairs to rolling-stock on the Northern and North Eastern Railways. During the year, the remodelling of Gorakhpur workshop on the North Eastern Railway was sanctioned. A new carriage and wagon repairs workshops at Jagadhri on the Northern Railway had already been sanctioned in the previous year.

The question of modernization of railway workshops, sheds and sicklines, continued to receive attention as in the previous year.

CHAPTER VI

RESEARCH AND STANDARDIZATION

A. RESEARCH ORGANIZATION

83. Setting up of the Research and Testing Organization.—(*a*) Research began on the Railways in 1935 as an off-shoot of the Central Standards Office at New Delhi when two officers were deputed to ascertain the maximum loads existing engines could haul and the maximum speeds they could attain under Indian conditions. Later, investigations were extended to the determination of permissible loads and speeds of locomotives and rolling-stock and the lateral forces exerted by them on track. The appliances for research during this period were principally mobile units—the Dynamometer Car and the Oscillograph Car. During World War II research lay dormant due to shortage of technical staff. After the war, a static research station was started at Shakurbasti near Delhi to augment the mobile units. A small test track was laid and the nucleus of a small centre and service workshop for static and dynamic testing of structures and rolling-stock was founded. Its most noteworthy features were the installation of a Soil Mechanics and Building Research Wing and a Rolling Load Fatigue Testing Machine.

(*b*) On 1 September 1952, the Research Section of the Central Standards Office was reorganized and established under the Research Directorate of the Railway Board. Its headquarters were subsequently transferred to Lucknow. Later on, two research sub-centres were organized at Lonavla and Chittaranjan.

(*c*) The actual move of the headquarters cell from Delhi to Lucknow took place in November 1952, where the office was set up temporarily in a vacant two-unit block of Class III quarters, pending the completion of the new administrative and laboratory building, the construction of which had already been taken in hand. The research yard and the stabling and test sheds having by this time been completed the mobile research units—a dynamometer car, a fuel test car and two Oscillograph Cars—were also shifted simultaneously. The staff and equipment of the nucleus building and soil mechanics static research station at Shakurbasti (Delhi) migrated to Lonavla in March 1953, soon after the first of the two officers of the sub-centre reported for duty from the railways. The administration of the chemical and metallurgical section of the Central Standards Office, which was already located at Chittaranjan on the date of the formation of the Research Directorate, was taken over on 1 September 1952, and its reorganization initiated.

(*d*) The Lucknow Centre carries out primarily research on the dynamic effects of vehicles on the track and the bridges and riding quality and performance tests on locomotives and rolling-stock assemblies and components. To supplement and permeate these activities a documentation and information service has been provided which will, in addition, publish bulletins and summaries of important researches conducted in India and abroad. The editing and publication of the Railway Board's Quarterly Technical Bulletin has also been taken over by the Research Directorate. The Lonavla sub-centre tackles problems on buildings, foundations and concrete engineering as applicable to railways. The Chittaranjan sub-centre functions in close co-ordination with the Locomotive Works in conducting chemical, and metallurgical studies on paints, water-softeners, lubricants, bronzes, metals and metal processing.

(*e*) A Research Controlling Committee—a Brains Trust representing leading technical and administrative heads of the Indian Railways was formed early in 1952 and in their meeting of 10 March 1953, a Priority Research Programme was chalked out. In assigning the priority to a problem for research the Committee bore three factors in mind; firstly, its immediate significance in progressing towards greater safety, efficiency and economy, secondly ; the fact that it cannot be investigated by any other National

Laboratory in India; thirdly, the problem is such that fruitful results can reasonably be expected within a couple of years.

(*f*) The Railway Research Organization has the following three chief objectives before it:

(i) Increased safety of rail travel combined with comfort;
(ii) Self-sufficiency; and
(iii) Simplicity and reliability of design leading to economy in capital, maintenance and operation costs.

84. Track Research.—(*a*) During the year under review the work done related broadly to the following heads:

(i) Track;
(ii) Rail Welding;
(iii) General Equipment.

(*b*) Under (i) Track—Comparative rail stresses at joints were investigated on 100 lb. D. H. rails laid on D & O plate sleepers (N + 3 spacing) with either the Duplex rail-free or the wood sleepers at the joints. It was observed that the higher average and maximum stresses were produced in the rail supported on the Duplex joint sleepers than that on the wooden sleepers. It was also apparent that reducing the spacing of the wooden sleepers at the joint, would decrease the rail stresses appreciably. Further tests in the series are under way.

Investigations were commenced on the flange forces exerted by the 1926 Standard and the modern Standard Pacific Locomotive on 1 in 8½ turnouts. The tests are still in progress. Valuable data on the behaviour of the rail and the track in turnouts under the various types of locomotives has already been collected which will be useful in improving the design of locomotives.

(*c*) In regard to (ii) Fatigue Tests on the Rolling Load Fatigue Testing Machine were carried out on rails, and rail joints welded by Thermit, Thermalite, Flash Butt and Secheron processes. The tests are still in progress but the preliminary data collected have been useful in improving the quality of welds turned out at the existing plants at Rosa and Kalyan.

(*d*) Regarding (iii) General Equipment. Two prototype pedal operated rail cycle trollies obtained from Denmark—one a tricycle type and the other a 4-wheeled type—were tried out at Shakurbasti with a view to assessing their suitability for their use by the Permanent Way Inspectors on open lines in lieu of the existing push trollies. The load-carrying capacity of these trollies was rather limited. Two improved types capable of transporting a 1,000 lb. load with two trolleymen have been ordered for further trials. Should these cycle trollies succeed in replacing the present type of push trollies, a considerable saving in the number of trolleymen required to operate them can be achieved.

85. Building Research.—The scope of the work done covered:

(i) Foundations on black cotton soil;
(ii) Site investigations on behalf of railways;
(iii) Trials to obtain maximum economy in building houses for low income groups.

(a) *Foundations on black cotton soil.*—A good many detailed investigations were carried out perhaps for the first time in the country. The results and general nature of the conclusions are being published as a Railway Board's Technical Paper (No. 295 entitled "Foundations on shrinkable soil").

Experimental foundations were also built on different railways on the basis of the investigations already carried out.

(b) *Site investigations* and laboratory analysis of foundation soils for the following structures were conducted on behalf of the railways and valuable advice rendered:—

(i) Foundations for a major road-over bridge at Kurla near Bombay;
(ii) Proposed building of the new station for New Delhi;
(iii) Proposed reservation office at New Delhi;
(iv) A saw mill at Gorakhpur.

(c) *Trial to obtain maximum economy in building houses for low income groups.*—Laboratory and field studies on the suitability and economy of different types of construction materials were made.

The use of cinders for the manufacture of cement concrete building blocks was found economical in certain areas where the cost of bricks was rather high and ashes available within reasonable leads. Although cinder concrete blocks were less susceptible to shrinkage and temperature cracks than straight sand-cement hollow blocks, cracks were found to develop at discontinuities in the walling such as windows and doors. Further investigations are in hand to ascertain the cause of the slight initial cracking that is sometimes likely to take place.

Observations on Cellular brick-work as an alternative to solid brick-work showed that this type of construction did not always result in economy; further trials are being pursued on the railways.

Several experimental reinforced concrete door and window frames were attempted, but as none proved successful further designs on experimental scales are in the making.

Experiments with bamboo in lieu of steel for light reinforced concrete structures have not so far met with success and further experiments are in hand.

86. **Soil mechanics research.**—(*a*) During the year, 800 tests were carried out on 229 soil samples. These samples were obtained during the course of site investigations and were studied under the following classifications:—

(i) Foundations;
(ii) Stability of embankments;
(iii) Suitability of soil for brick burning and soil stabilization;
(iv) Properties of black cotton soil ;
(v) Comparison of shear strengths of different types of soils ;

(*b*) The following problems referred to the Centre on which advice was given to railways are worthy of particular mention :—

(i) Stabilization of the embankment on the Ferozepur Cantonment—Jullundar City Section of the Northern Railway.
(ii) Analysis of the earth-work forming the embankment at miles 195/233 on the Bombay-Baroda Section of the Western Railway.
(iii) Suitability of soil for burning bricks on the Chunar-Robertsgang Construction.

Remedial measures suggested in each instance proved successful.

(*c*) Investigations are also being carried out on the causes of heavy corrosion of rails and sleepers and track components on certain sections of track laid on a natural sand ballast on the Western Railway.

87. **Locomotive Research.**—(*a*) Broadly speaking the research comes under two divisions.

(i) Locomotive as a power unit;
(ii) Locomotive as a vehicle on the track.

(*b*) On the Locomotive as a power unit two sets of trials were conducted. The first on Diesel shunting locomotives in regard to their characteristics under existing operating and maintenance conditions. The studies have revealed the need for better maintenance techniques and more skilled usage to derive the maximum benefit from this type of power in shunting services.

The studies are being extended to embrace working conditions in different yards and situations.

The second set of trials were a continuation of tests on the design of the grate of AWC locomotives of the Ex-N. S. Railway and were aimed at improving their steaming conditions with the type of coal used on the Secunderabad Division. AWC locomotives were originally fitted with the

Hulson Grate and the trials confirmed the earlier observation that the Finger Rocking Grate was the most satisfactory type for the hand-fired Indian coals.

(*c*) On the Locomotive as a vehicle, track investigations were started as referred to already on the flange forces set up by Pacific locomotives over 1 in $8\frac{1}{2}$ and 1 in 12 turnouts. The trials are still in progress.

Trials were continued during the year on the performance of fabric friction liners on the bogie and hind truck side control slides of WP and WG locomotives. It was established that an optimum constant co-efficient of friction of 0·16 could not be attained under service conditions with any of the existing brands of friction fabric material used for liners. Means have been developed to protect the liner bearing surfaces from contamination by dust and oil and further trials are in hand. Future trials are projected on the properties of other superior fabrics, being developed by manufacturers, and the use of graphited bronze liners in lieu of friction fabrics.

88. Carriage and Wagon Research.—Riding quality tests were carried out on a prototype B. G. all-metal integral coach, designed and built by a reputed Swiss firm. By virtue of its superior spring suspension in comparison to the existing I. R. S. Standard design of passenger coaches the riding of Schlieren (Swiss) coach inclined on the whole to be better under identical conditions of load and speed. It was further observed that by suitable modification of the spring suspensions of the existing I. R. S. design the possibility existed of improving somewhat its present riding qualities.

89. Fuel Research.—(*a*) To assist the Railway Fuel Economy Committee, the Fuel Test Car was, during the period reviewed, engaged on trials to determine the relative consumption of different grades of coals and also of sized and "run of mine" coals in locomotives operating given train services.

(*b*) The regular annual meeting of the Indian Railway Fuel Committee was not convened during the year. Investigations on the deliberations and resolutions of the third Committee Report were continued by the Railways.

90. Chemical & Metallurgical Research.—The Chemical & Metallurgical Research covered the following items of work:

(i) Investigations into material failures;

(ii) Development of production techniques in its chemical and metallurgical aspects;

(iii) Development and use of indigenous products;

(iv) Participation in standardization and development conventions;

(v) Metallurgical inspection of components.

(*a*) Investigations into *material failures* included, amongst others, failures of axles of WP engines, coupled axle-boxes, front and hind truck control silico manganese steel springs, bogie spring hangers and seats, return crank arms, laminations in, and pitting and grooving of, boiler plates. corrosion of bronze valve spindles, wagon plates and brass sleeves for vacuum fittings.

(*b*) In the *development of production techniques* investigations were undertaken with the aid of various forms of metallurgical testing, including gamma-ray radiography, on the welding of unusually thick ($5\frac{1}{2}''$) steel sections for the manufacture of locomotives bar frames at the Chittaranjan Locomotive Works: an efficient welding and heat treatment procedure was established and satisfactory welds produced. Experiments were continued on water clarification, high duty cast iron and carbon deposits in locomotive cylinders.

(*c*) *Trials on the development of indigenous products* covered fire retardant paints and roofing compositions. Experiments with indigenous fire-clay refractory bricks showed that for the moderate heat duty groups, a brick to Indian Standard No. 6 was suitable for use in locomotive brick arches and could replace in time the more expensive high heat duty fire-clay bricks.

(*d*) As in previous years, *Metallurgical inspection of* components manufactured by the Chittaranjan Locomotive Works and the Tata Locomotive and Engineering Company Limited, Tatanagar, was continued.

Advice was given on the most suitable metallurgical processes required in the manufacture of components to the quality laid down in specifications. Details of tests to control quality in production were also prescribed.

(*e*) The Third Annual Meeting of the Indian Railway Chemists and Metallurgists devised procedures for the improvement in the quality of cast iron and non-ferrous castings. Besides discussing the application of modern methods of welding and heat-treatment, they reviewed Railway and National specifications, the conservation of non-ferrous metals and the formation of substitute materials for proprietary articles.

91. **Water softening.**—(*a*) The Special Committee of the Indian Railway Chemists and Metallurgists on water-treatment appointed to study the performance of the existing water softening plants and make suitable recommendations was convened twice during the year by the Research Organization. In its first meeting in July 1952, the following conclusions were reached.

(i) Future extension of water-treatment on the Indian Railways should, as far as possible, be based on the principle of internal treatment of feed water with chemical complexes based on suitable tennins, preferably of indigenous origin;

(ii) Normally those feed water supplies should be treated externally the hardness of which exceeds 25 parts per 100,000 and where the consumption for loco purposes at any individual station exceeds 100,000 gallons per day;

(iii) To ensure success, the human element should be eliminated as far as possible by adopting methods of dosing feed water with chemicals added either to the tender or during its passage to the boiler through its injectors;

(iv) To get rid of sludge and reduce total dissolved mineral matter, the blow-downs should not be left to the discretion of the engine crew, but be operated from the cab according to a prescribed schedule and registered by means of an automatic recorder;

(v) Owing to very heavy corrosion noticed in the boilers made by Tata Locomotive and Engineering Company operating in the North East Section of the Ex-M. S. M. Railway, the Oscillometer type of treatment previously proposed, which is only a method of introducing a specified amount of sodium bicarbonate, should be supplemented by tannin additions.

(*b*) During the second meeting of the Sub-Committee held in November 1952, a design of a dosing gear which is inexpensive, fool-proof, fully automatic and simple in operation for adoption on various classes of locomotives was recommended. Installation of a blow-down counter in the cab was suggested in addition to fitting locomotives with intermittent blow-off cocks to ensure a definite blow down schedule. Sections reputed for bad water supplies, on which trials should be conducted were also indicated. Details of treatment complex, duties of treatment control staff and related shed control organization were also worked out. The Locomotive Standards Committee Meeting, after studying these proposals endorsed the main recommendations of the Sub-Committee and recommended that trials on the basis of internal treatment be conducted under the direction and supervision of the Metallurgical and Chemical Research Sub-Centre, Chittaranjan.

92. **Miscellaneous activities.**—(*a*) A course of training in Soil Mechanics attended by 7 Engineers (one from the Central Railway, two from the Eastern Railway, two from the Northern Railway and two from the Southern Railway) was held from 7 to 18 April 1952. The syllabus covered:

(i) Elements of Soil Physics;

(ii) Texture of Soils;

(iii) Structure of Soils;

(iv) Other properties of Soils;

(v) Elements of Mechanics of earth masses;

(vi) Stresses distribution in earth masses;

(vii) Theory of consolidation;
(viii) Shearing resistance of Soils;
(ix) Soil exploration and investigation;
(x) Structural applications of Soil Mechanics covering stability of foundations, pile foundations, stability of cuts in embankments;
(xi) Stability of slopes; and
(xii) Soil stabilization.

Demonstration and practical working in the laboratory was followed by an instructional tour to the Budni Barkhera project from the 16 to 18 April 1952.

(*b*) Two refresher courses were held in Soil Mechanics. The first, held from 27 October 1952 to 1 November 1952, was attended by four Engineers from the different railways and the second, held from 23 February 1953 to 28 February 1953, was attended by five Engineers.

(*c*) The Research Organization participated in the Indian Railways Centenary Exhibition held in Delhi. The Oscillograph and Dynamometer Cars were placed on view and a working model of a railway train was exhibited for demonstrating the methods of measuring soil pressures, track and bridge stresses.

(*d*) The Research Organization took part in the symposium on "Industrial Failure of Engineering Materials and Alloys" held in February 1953 at Jamshedpur under the auspices of the National Metallurgical Laboratory and paper entitled "Service Failures of Railway Materials" was presented.

(*e*) The Research Organization participated actively in the various specification-making bodies of the Indian Standards Institutions on non-ferrous and ferrous metals, organic and inorganic chemicals, coal tar, solid mineral fuels, paints lubricants and refractories.

B. STANDARDIZATION

93. General.—The Central Standards Office for Railways continued to perform design and standardization functions in the Civil and Mechanical Engineering and Architectural fields. The research work also continued to be performed in this office till the formation of the Railway Testing and Research Centre in September 1952. The Soil Mechanics and Building Research work was, however, transferred to the Railway Testing and Research Centre in March, 1953. Details of the Research Work performed during the year under review appear under part 'A' of this chapter.

The Central Standards Office also performed the functions of Consulting Engineers and dealt with all references made by the Railways, and Indian and Foreign Builders of Railway Equipment in respect of design, manufacture and inspection problems.

Two officers of the Locomotive Wing were sent on deputation to the United Kingdom and the Continent for training and they visited several locomotive and other works. They also attended a Welding Course held by the British Welding Research Association. One officer of the Civil Wing and one officer of the Carriage and Wagon Wing were placed on deputation to New Zealand and Australia to enable them to study Railway Signalling and Interlocking and Mechanical Engineering practices in these two countries.

Fourteen Special Class Apprentices received training for a period of six weeks each in the Calculation and Design Section of the Locomotive Wing of the Central Standards Office at Chittaranjan. Four Engineering Graduates were also given training as Premium Apprentices in this Wing.

New books and catalogues were added to the Central Standards Office Library, raising the number of books and catalogues in the Library to 2,400 and 810, respectively. Out of these, 300 books were transferred to the

Locomotive Wing at Chittaranjan and 455 books were issued on temporary loan to the Director, Railway Testing and Research Centre, Lucknow. Technical Journals and Magazines from 45 Institutions and Firms from the U. S. A., Australia, the U. K. and India were received for circulation and record purposes. Articles of interest continued to be indexed for reference and guidance.

94. Design and Standardization—

(1) *Standards Committees.*—The following Standards Committees continued to function under the Central Standards Office:

(1) Bridge and Structure Standards Committee ;
(2) Track Standards Committee ;
(3) Signalling and Interlocking Standards Committee ;
(4) Building Standards Committee ;
(5) Locomotive Standards Committee ;
(6) Carriage and Wagon Standards Committee ;
(7) Electrical Standards Committee ;
(8) Standing Committee on Standards and Specifications.

(ii) *Designs and Technical Consultations.*—Brief details of the more important items of design, standardization and technical consultation work undertaken by the different Wings of the Central Standards Office during the year are summarized below.

CIVIL ENGINEERING WING

Designs—

Bridges—(*a*) The design of girder spans of the balanced cantilever type for the proposed Rail-cum-Road Bridge at Mokameh was undertaken. The spans will be the longest yet undertaken in India.

(*b*) Detailed designs of 150 ft. B. G. M. L. standard span were prepared. Revised drawings of standard reinforced concrete pipe culverts were undertaken. Standard loadings for 2′-6″ gauge were laid down and Equivalent Uniformly Distributed Loads were included in the Bridge Rules.

Track.—The following designs were prepared:—

(*a*) C. I. Joint chairs for 100 lb. B. H. Rail ;
(*b*) Joint chair support for 90 lb. B. H. Rail on Pot sleepers of the Southern Railway ;
(*c*) 1 in 12 crossing with over-riding splice rail ;
(*d*) Fishing fit nose blocks ;
(*e*) Two key type bearing plate anticreep C. I. for B. G. 75R FF BSS with two holes ;
(*f*) Two key type bearing plate anticreep C. I. for M. G. 50R FF BSS with two holes ;
(*g*) 1 in 12 left hand turnout and 21 ft. over-riding switch for steel sleepers with two way keys and loose jaws B. G. 90R FF BSS ;
(*h*) 1 in 16 left turnout and 24′ 4″ O. R. Switch M. G. 60R FF BSS ;
(*i*) R. C. Sleeper Blocks BG and MG ;
(*j*) Wheel and axle for B. G. Inspection Trolley ;
(*k*) Compregnated wooden fishplate B. G. ;
(*l*) New fishplate section for 100 lb. B. H. Rail ;
(*m*) Combination fishplates for new I. R. S. Rail Sections.

Signalling & Interlocking.—(*a*) Drawings of a number of Mechanical and Electrical components including signal mechanisms for lower quadrant signals, rotary detector for Double Wire, layout of facing point lock, split stretcher bars for facing lock (MG) and locking Pawl shaft and its bracket used on Neale's Token instrument were finalized and issued;

(*b*) Drawings of spring points lever and single points lever were completed for standardization, and those for Point Machine and Double Wire, Signal Brackets 2 doll and 3 doll, poles for portable control phones, wire pulleys and brackets for Double Wire Signalling, were undertaken ;

Building.—Designs for pre-cast reinforced concrete platform benches, fencing and door and window frames were prepared and are on trial on the Railways.

Technical Consultations.—The Civil Engineering Wing was consulted by the Railways on matters relating to the assessment of the strength and strengthening of the existing bridges, design of special structures such as extensions to workshops at Gorakhpur, concrete cover for the deep cutting on Budni-Barkhera doubling, failures of Rails and components in service, permissible speeds of locomotives on different sections of track, and adoption of alternative and economic equipment for signalling.

Working stresses for various species of timber were evolved and suitable clauses introduced in the Steel Structures Code. The superimposed loads on buildings were revised to accord with the latest British Standard Code of practice and revised clauses inserted in the Steel Structure Code. The subject of wind load on building was investigated and revision of the relevant clauses of the Steel Structures Code was undertaken.

Methods for deriving earth pressures on retaining walls were reviewed and it was decided to amend the clause relating to the Angle of Repose in the Pier and Abutment Code. A standard method for deriving the safe bearing pressures on piles by load test was suggested.

The Track Standards Committee recommended that track on girder bridges should follow the camber to enable standard sizes of bridge timber to be used, any small irregularities in the actual camber of the span being adjusted in the thickness of timber. The suggested sleepering arrangement is being tried on two Railways. The sizes of crossing sleepers were also standardized.

Standard forms for reporting rail and fishplate fractures were evolved.

Alternative methods of reconditioning of crossings by electric arc welding and by gas welding were reviewed, and it was decided that Railways having both electric and gas welding equipments should lay reconditioned crossings under exactly similar conditions of traffic so that their behaviour could be compared and the more suitable methods adopted on all the Railways.

The recommendation of the Track Standards Committee to provide a slight bend to the fishplate at the heel block, to permit the movement of the tongue rail with the fish bolts kept tight, was approved and the standard drawings were amended to incorporate this feature.

The Signalling and Interlocking Standards Committee examined a number of drawings prepared for standardization of mechanical and electrical signalling components and also discussed certain aspects of the draft General Rules and the Rules for the Opening of Railways.

The Building Standards Committee reviewed the results of trials of pre-cast cinder concrete block construction and recommended that though the results had not been very satisfactory, further trials be carried out in view of the many advantages of this type of construction.

The construction of quarters on different types of foundations on black cotton soil was considered and it was recommended that sand pillow type of foundation which had been favourably reported upon may be adopted. 'Post and Panel' type of construction with light gable roofs were recommended for trial as an alternative.

Provision of natural illumination in workshop sheds was considered and it was suggested that Pepper-Pot type of factory lighting being economical be given a trial.

The use of felt bituminous and Asphalt mastics for roofing and damp proof course was reviewed and it was decided that two coats of bitumen or coal tar on top of a layer of cement mortar of 1 : 2 proportion and not less

than 3/4″ thick be adopted for damp proof course at floor level which should be continuous throughout the building. The use of proprietary brands of roofing material being expensive was not recommended.

ARCHITECTURAL WING

Designs.—The more important designs of buildings prepared and supplied to Railways during the year under review are as follows :—

(*a*) Indian Railway Centenary Exhibition—Complete layout plan and designs of pavilions, etc., were prepared for the Railway Centenary Exhibition held in New Delhi. The buildings included the main entrance with its curved wall containing murals. the Indian Railways Pavilion, Foreign Railways Pavilions, Indian Manufacturers' Stand, Stalls, the Great Pylon, Kanchunjunga Station, Open Air Theatre, Administrative Offices, Booking Offices, the Forum, the Pond with Umbrella, Cafeteria, Refreshment Stalls and such other items. The designs were striking and novel in appearance. Standard steel stanchions and roof coverings, which are normally used by Railways for the platforms and goods sheds, were utilized for this purpose to effect economy. The general set up, design, colour scheme, lighting, etc., were of high standard and compared favourably with exhibitions of this type in other countries.

(*b*) Northern Railway Headquarters, New Delhi—To meet the requirements of the Northern Railway, an additional block of offices was required at the Baroda House premises. The building is in steel frame structure and is designed to contain four storeys at present and an additional storey in the future. Provision is also made for its lateral expansion on side wings. Suitable arrangement for lavatories and other amenities have been provided for the staff and officers. The design is on very modern lines and scientifically designed to give protection from sun by vertical and horizontal concrete sun breakers.

(*c*) Divisional Offices at Jullundur—Designs for new office building at Jullundur for Northern Railway were prepared. The building is on modern lines and designed on unit system so that changes in the arrangement of internal rooms if required in future, could be easily carried out without major structural alterations. Working drawings for the scheme were prepared.

(*d*) Railway Testing and Research Centre, Lucknow—Larger scale details for the Research Centre were supplied. Working drawings for the officers' flats and the outhouses, attached to the Centre, were also prepared.

(*e*) Reservation and Information Bureau, New Delhi—A suitable building providing proper facilities was designed for a Reservation and Information Bureau in Connaught Circus, New Delhi, proposed to be built by the Northern Railway to meet the needs of the public.

(*f*) Station Building at Gandhidham—A station building at Gandhidham on the Kandla-Deesa Line was designed to meet the requirements of this new town. Working drawings of this building were prepared.

(*g*) Station Building at Pandu—Working drawings in connection with the proposed new building to meet the present-day requirements were prepared.

(*h*) Metre Gauge Station Building at Lucknow—Larger scale details were prepared and supplied.

(*i*) Hospital at Madura—A hospital to accommodate about 55 beds was designed. The design is on modern lines and includes administrative offices, laboratories, X-ray department, operation theatre, etc.

(*j*) Integral Coach Factory, Perambur—Revised designs for Officers' flats were prepared and working drawings and other large-scale details were also prepared. New designs for semi-detached residences for the officers were also prepared. Larger scale details for the staff quarters type I, II, III and IV were also prepared.

(*k*) Standard plans for staff quarters—Standard plans for various types of staff quarters, single and double storey, were prepared. The standard of accommodation in these designs is more or less based on the recommendations made by the Committee of Experts for Building Works and to suit the Railway requirements.

(*l*) Standard plans for Officers' flats—Sketch designs for Officers' flats providing accommodation on austerity standards were prepared.

(*m*) Officers' Colony, New Delhi—The Northern Railway has acquired 40 acres of land in the Diplomatic Enclave for officers' colony. A layout plan showing the layout of the roads and various plots was prepared. There are about 40 plots besides site for a club and hostel.

(*n*) Standard plans for Class III Waiting Hall—In order to meet the long felt need of providing suitable waiting halls for Class III passengers, designs of waiting halls for use on small and medium size stations were prepared. This will replace the old type of waiting sheds which were not so suitable. The new design will give suitable facilities for waiting, sleeping, refreshment. lavatories, etc. It is proposed to have these waiting halls forming part of the main building wherever possible.

LOCOMOTIVE WING

Designs.—The more important designs of locomotives prepared during the year are reviewed below:

(*a*) Design of welded bar frame for WG Locomotives under manufacture at Chittaranjan, utilizing the maximum length of rolled slabs produced at TISCO ;

(*b*) Drawings for WG boilers using maximum width of boiler plates rolled indigenously ;

(*c*) Drawings for revised front truck control on A/CWD locomotives for testing riding qualities;

(*d*) Tolerance charts for frame alignments of WG and YG locomotives being built in India ;

(*e*) Revised design of hind truck radial arm, WG locomotives, to suit manufacture in Chittaranjan ;

(*f*) Review of design of WG locomotive cylinders and modifications thereon to arrest cracks developed in service ;

(*g*) Design of composite axle boxes for coupled wheels on WG locomotives;

(*h*) Design of gravity and spring control front truck for trial on a WG locomotive;

(*i*) Rating and performance of all standard locomotives ;

(*j*) Statement showing recommended operating loads for WG, XD, XE, WHG, YD, YHG and YL class locomotives ;

(*k*) Load/speed Schedules on level and graded track ;

(*l*) Strength of wagon drawgear—broad, metre and narrow gauges ;

(*m*) Investigation on wheel flange profiles and condemning limits ;

(*n*) Stress analysis on miscellaneous locomotive components.

Technical Consultations.—With the regrouping of Railways, the Locomotive Standards Committee consisted of only six Chief Mechanical Engineers as compared with the larger number prior to regrouping. In order to

accelerate the Committee's work, items of discussions were divided into two groups, one for consideration by a Sub-Committee and another for consideration by the Main Committee. One meeting each of the Sub-Committee and the Main Committee was held during the year. Apart from improvements to the components of the existing IRS locomotives, the following matters were discussed :—

(*a*) Adoption of new type flange profiles and condemning limits of wear ;

(*b*) Hot Box Committee's Report ;

(*c*) Code of Boiler Manufacture and Inspection ;

(*d*) Future policy to be followed in planning for renewals of locomotive boilers ;

(*e*) Recommendations of the Indian Railway Chemists and Metallurgists Sub-Committee on Water Treatment for introduction of the Internal Dosage System on Locomotive boilers.

Miscellaneous.—The production of part drawings for locomotive components continued for both standard and non-standard American built locomotives and 1,226 drawings were made during the year, bringing the total to 3,130. Seven hundred and seventy seven tracings were mechanically reproduced and circulated to railways.

CARRIAGE & WAGON WING

Designs—

Carriage.—Among the various carriage and wagon designs undertaken during the year under review the more important are given below :—

(*a*) Designs for the broad and metre gauge railcars were prepared and sent with the Particular Specification for procurement from abroad ;

(*b*) Metre gauge air-conditioned coaches on standard underframes ;

(*c*) Military car for the transport of troops with improved amenities ;

(*d*) Postal vans of improved design ;

(*e*) Air-conditioned broad gauge saloon ;

(*f*) Rationalization of passenger stock for broad and metre gauges ;

(*g*) Investigations into the built-in camber in carriage underframes ;

(*h*) Construction drawings covering modifications to the carriage bogie to take roller bearing axle boxes.

Wagon.—(*a*) Metre gauge molasses tank for mounting on 'WD' wagon underframe ;

(*b*) Running gear arrangements for the four wheeled wagons, modified to take roller bearing axle boxes for broad and metre gauges ;

(*c*) Petrol tank wagons modified to omit the sun-shades and insulation resulting in reduction of tare weight and consequent increase in pay load ;

(*d*) Typical general arrangement drawings for auxiliary cage to be fitted on open wagons for the carriage of sugarcane ;

(*e*) Modifications to the narrow gauge (2′-6″) stock to take Indian Railway Standard metre gauge couplers for use on the Saurashtra section of Western Railway ;

(*f*) Pressed steel axle-guards for 'OX' type wagons of 19 ton axle load to replace the old 'Y' type axle-guard ;

(*g*) Broad gauge covered wagon of unit construction to facilitate manufacture.

Electrical—(*a*) Improved arrangement for switch panel for passenger coaches ;

(*b*) Alternative designs for the external lights for carriages for the convenience and safety particularly of lady passengers ;

(*c*) Modifications to the inter-vehicle electric train lighting coupler.

Technical Consultations.—The following are the more important subjects which were discussed and considered during the year:—

(*a*) Standardization of the composition, equipment and floor plan of Accident Relief Trains—Classes A, B and C ;

(*b*) A review of the internal security devices on bodyside doors and windows, after actual inspection of samples of various devices specially fitted on a passenger coach, with a view to providing additional safeguards against crime in trains ;

(*c*) Large scale application of synthetic resin bonded moisture-proof plywood of indigenous manufacture for interior panelling of coaching stock, in place of very expensive imported material, in the interest of economy and self-sufficiency ;

(*d*) Standardization of layouts of broad gauge passenger stock on standard underframes, using timber construction ;

(*e*) Standardization of essential notices to be exhibited in passenger stock ;

(*f*) Provision of small tools required for the normal periodical overhaul of the coaches built by the Hindustan Aircraft Limited ;

(*g*) Fitting of roller bearing axle boxes to special types of rolling-stock, viz:

(i) air-conditioned coaches,
(ii) dining cars,
(iii) bogie saloons and inspection carriages,
(iv) postal vans,
(v) bogie well wagons, and
(vi) explosive vans,

(*h*) Adoption of Class IV steel for most of the components of the centre buffer couplers fitted to the metre gauge carriage and wagon stock, with a view to eliminating the use of special high tensile steel to only two important items, viz., coupling block and coupling yoke pin ;

(*i*) Tightening up of the carriage and wagon wheel gauge ;

(*j*) Cases of corrosion observed on all-metal coaches built by the Hindustan Aircraft Limited ;

(*k*) Dielectric insulation of aluminium roofs of all-metal E.M.U. stock to prevent damage by accidental electric contact with the overhead live system ;

(*l*) Suitability of spheroidal graphite cast iron bearings for carriage and wagon stock, with a view to effect economy in non-ferrous metals ;

(*m*) Standardization of voltages in the air-conditioned coaches ;

(*n*) Eradication of teething troubles in air-conditioned coaches ;

(*o*) Measures necessary to prevent damage to rolling-stock under accidental electrical contact of the carriage roof with the overhead electrical live system ;

(*p*) Standardization of the types and wattages of incandescent lamps for train lighting purposes ;

(*q*) Examination of the electrical loads on broad gauge and metre gauge passenger stock in relation to train lighting equipment ;

(*r*) Preparation of a manual for the electrical Department ;

(*s*) A Standard Specification for electric signs.

Miscellaneous—The Carriage and Wagon Wing undertook the following more important items of miscellaneous work :—

(*a*) Checking of steel requirements for the manufacture of all-metal coaches and various types of wagons with a view to assessing the manufacturing costs and facilitating the issue of licenses for steel quotas ;

(*b*) Layout of "Museum of imported Railway Stores" for the Indian Railway Centenary Exhibition ;

(*c*) Short descriptive write-ups for the various field exhibits and other special exhibits for individual railway stalls in the Indian Railway Centenary Exhibition ;

(*d*) Layouts for the broad and metre gauge exhibition trains and selection of exhibits for these trains ;

(*e*) Preparation of drawings for the Carriage and Wagon and Stores and Specification Standards Committees, and maintenance of standards drawings for rolling-stock.

95. Specifications and Codes of Practice.—The normal work of keeping Indian Railway Standard Specifications up-to-date continued during the year. One new Indian Railway Standard Specification was issued and four were revised and re-issued.

In addition, sixty-seven new Indian Standards Institution Specifications were adopted for use on Railways.

Reinforced Concrete Code was revised and re-printed. Corrigendum slips were issued to the various Indian Railway Standard Codes pertaining to the Civil Engineering Wing.

.Particular Specifications were prepared for the XB, XD, XE and MAWD boilers. Particular Specifications were also prepared for the following locomotives:

WT Class, 2-8-4 tank locomotives ;

ZP Class, 4-6-2 locomotive for passenger service on 2′-6″ gauge ;

YP Class, 4-6-2 locomotive for passenger service on Metre Gauge ;

Outline Specification for Broad, Metre and Narrow Gauges Diesel locos ;

Compilation of a Draft Code for Manufacture and Inspection of Boilers. In addition, a list of modifications was prepared for WG class locomotives for a further order placed abroad.

Particular Specifications were prepared for the following types of rolling-stock to be procured from indigenous sources as well as from abroad against the 1953-4 Programme:

(1) Bogie Coaching Underframes 68′-0″ (Mild Steel) ;
(2) Bogie Coaching Underframes 68′-0″ (H. T. Steel) ;
(3) All Metal Lower Class Coaches on 56′-6″ Underframe ;
(4) Bogie Coaching Underframes 56′-6″ for Metre Gauge all-metal coaches ;
(5) Bogie Well Wagon Type MBWX ;
(6) Bogie Well Wagon Type MBW ;
(7) Bogie Coaching Underframe 56′-6″ for Japan ;
(8) Bogie Coaching Underframes 68′-0″ Mild Steel (Welded design) ;
(9) All-metal Lower Class Metre Gauge Coach body shells for foreign procurement programme ;
(10) Bogie Coaching Underframes 56′-6″ for item (9) ;
(11) Metre Gauge Bogie Hopper Wagon 'MBOB' ;
(12) Metre Gauge Diesel Rail Motors and Trucks ;
(13) Bogie Hopper Wagons Broad Gauge (BOBC) ;
(14) Metre Gauge Covered Wagon M. C. ;
(15) Metre Gauge Open High Sided Wagon MOX ;
(16) Metre Gauge Bogie Open Coal Wagons 'MBOC' ;
(17) Metre Gauge Bogie Tank Petrol Wagon 'MBTPX' ;
(18) Metre Gauge Goods Brake Van 'MBVG' ;
(19) Narrow Gauge Bogie Open Wagon 'NOL' ;
(20) Narrow Gauge Bogie Rail Wagon 'NR' ;
(21) Narrow Gauge Bogie Hopper Wagon Centre—Discharge 'NOB' ;
(22) Narrow Gauge Goods Brake Van 'NBVG' ;
(23) Broad Gauge 4-wheeled Underframes 27′-6″ ;

(24) Narrow Gauge Bogie Coaching Underframes 34′-6″ ;
(25) Broad Gauge Track Recording Car ;
(26) Metre Gauge Electric Multiple Unit Stock ;
(27) Broad Gauge Open Heavy Wagon 'OX' ;
(28) Tank Barrels to carry molasses on Metre Gauge 'WD' Underframes ;
(29) Metre Gauge Track Recording Car ;
(30) Broad Gauge Covered Wagon 'CR' ;
(31) Broad Gauge Covered Cattle Wagon 'CMR' ;
(32) Metre Gauge Covered Wagon MC for educational order ;
(33) Bogie Coaching Underframe Metre Gauge 56′-6″ for educational order ;
(34) Metre Gauge Open High Sided Wagon 'MOX' for educational order ;
(35) Electric Multiple Unit Stock (Broad Gauge) for the Bombay Suburban Services.

The Standing Committee on Standards and Specifications met once during the year and discussed the following items :—

(i) Proposed revisions to the existing Indian Railway Standard Specifications.
(ii) The adoption of several Indian Standards Institution Specification for Indian Railway purposes.
(iii) The adoption of Lead Seal Punches as the future standard for use on Indian Railways.
(iv) The adoption of standard type of buttons for use in Railway Uniforms.

96. Inspection.—The inspection of locomotives manufactured at the Chittaranjan Locomotive Works and TELCO continued during the year and the following locomotives and boilers were inspected and accepted during the year :—

27 WG locomotives produced by Chittaranjan Locomotive Works ;
19 XB boilers and } produced by Tata Locomotive and
28 YG locomotives } Engineering Company.

97. Liaison with Technical Bodies.—This office represented the Ministry of Railways on the General Council and 39 Sectional Committees and Sub-Committees of the Indian Standards Institution. Active part was taken in initiating and developing all-India Standards which were of particular interest to Railways.

This office also represented the Ministry of Railways on the—

(*a*) Mechanical Engineering Committee of the Board of Engineering Research ;
(*b*) Bridge Sub-Committee of the Indian Roads Congress.

Membership of the following Institutions was continued and their publications were regularly received, circulated and used for reference purposes :—

(1) Association of American Railroads (USA) ;
(2) American Railway Engineering Association (USA) ;
(3) American Society for Testing Materials (USA) ;
(4) International Association for Bridge and Structural Engineering (Switzerland) ;
(5) Master Boiler Makers' Association (USA) ;
(6) Institute of Welding (UK) ;
(7) Indian Roads Congress, New Delhi ;
(8) Timber Dryers' and Preservers' Association of India.

Membership of seven other Institutions was transferred to Director, Railway Testing and Research Centre, Lucknow.

CHAPTER VII

RAILWAY COLLIERIES

98. Railway Fuel Economy Enquiry Committee.—The final report of the Railway Fuel Economy Enquiry Committee was received by the Railway Board in March 1953. This Committee was appointed in October, 1951, under the Chairmanship of Shri Darab Cursetji Driver, President of Coal Consumers' Association, Calcutta, "to examine the supply, consumption and reserve stocks of coal on railways and to make recommendations for economy in expenditure on coal used as fuel". The recommendations cover a wide field in that they deal with issues bearing on production, preparation, grading and pricing of coal, production and utilisation of lignite in the South, rationalization of coal supplies, short and long term plans for development of coal transport, electric and diesel traction on railways, fuel control organizations and training schemes, fuel accounts and statistics and power and fuel Research. Action has already been initiated for implementation of recommendations concerning the Ministry of Railways alone. Other recommendations are under examination in consultation with the Ministry of Production and the Planning Commission.

99. Total coal consumed by railways.—The total quantity of coal consumed on all Indian Railways during the year under review is shown below, compared to the previous year:

	Tons 1951-2	Tons 1952-3
Government Railways	*10,726,788	**11,036,479**
Non-Government Railways	80,706	**82,463**
TOTAL	*10,807,494	**11,118,942**

The grade-wise distribution is as follows:—

Grade	Tons 1951-2	Tons 1952-3
Selected A	1,009,064	**1,108,476**
Selected B	2,515,582	**2,571,400**
Grade I	*5,293,534	**5,397,160**
Grade II	1,404,242	**1,400,578**
Grade III-A and B	89,742	**96,126**
Small coals	495,330	**545,202**
TOTAL	*10,807,494	**11,118,942**

NOTE.—Figures for the Gondal region of the Western Railway and the Assam portion of the North Eastern Railway have been distributed on an estimated basis.

* Revised figures.

100. Coal mined in India.—In 1952-3 the coal mined in the various states in India amounted to 35,998,950 tons as against 35,148,949 tons in 1951-2, i.e., there was an increase of 850,001 tons in the year under review.

101. Coal despatched by rail.—The quantity of coal carried by the Eastern Railway during 1952-3 was 28·67 million tons, or 0·58 million tons more than that carried during the previous year.

102. Output from principal railway collieries.—The total output from the principal railway collieries during the year 1952-3 as compared with 1951-2 is shown in the sub-joined table. There has been an increase of 40,568 tons or 1·28 per cent as compared with the output of the previous year.

OUTPUT OF COAL FROM RAILWAY COLLIERS DURING 1952-3

(Figures in tons)

Colliery	Railway	1951-2	1952-3						
			Total	Selected		Grade			
				A	B	I	II	III A	III B
(1) Bhurkunda	Eastern	180,604	168,212	..	168,212	..	..	..	..
(2) Kargali	Central	612,036	608,672	..	..	608,672	..	..	..
(3) Kurharbaree and Serampore	Eastern	309,004	288,879	235,933	22,206	..	..	..	30,740
(4) Joint Bokaro	Eastern	1,436,097	1,499,481	..	..	1,459,944	39,537	..	..
(5) Joint Sawang	Eastern	43,802	63,613	..	..	63,613	..	..	..
(6) Jarangdih	Western and Southern	23,352	27,788	..	..	..	27,788	..	..
(7) Talcher	Southern	133,967	126,430	..	..	..	126,430	..	..
(8) Kurasia	Western	228,967	232,887	..	..	232,887	..	..	..
(9) Argada	Eastern	100,797	90,070	..	90,070	..	..	..	..
(10) Deulbera	Eastern	87,045	90,207	..	..	..	90,207	..	..
	TOTAL	3,155,671	3,196,239	235,933	280,488	2,365,116	283,962	..	30,740

The total quantity of coal despatched by railway collieries during 1952-3 amounted to 2,775,417 tons, of which 2,673,877 tons, or 96·3 per cent were despatched to Indian Railways. This represents 24·0 per cent of the total coal consumption of railways during the year.

103. Coking coal.—The particulars of the coking coal produced by railway collieries during the year are summarized in the following statement:

QUANTITY OF COKING COAL PRODUCED BY RAILWAY COLLIERIES DURING 1952-3

Colliery	Grade	Tons produced	Quality of coal and where used
(1) Kargali	Grade I	608,672	Inferior coal of high ash content and poor coking proportion; used entirely for goods services.
(2) Giridih (Kurharbaree and Serampore)	Selected 'A'	235,933	Best high grade coking coal, the dust of which is manufactured into hard metallurgical coke for use in railway foundries and workshops; used for mail, express and goods services.
	Selected 'B'	22,206	
	Grade IIIB	30,740	Very inferior coking coal unsuitable for metallurgical purposes owing to high ash content; used for slow goods and shunting services.
(3) Joint Bokaro	Grade I	1,459,944	Inferior grade coal, the dust of which only is suitable for metallurgical purposes; the seam worked as a whole, owing to high ash content is unfit to be used even for blending with high grade coking coals, unless intensive cleaning and washing is resorted to; used entirely for goods services.
	Grade II	39,537	Very inferior coking coal; unsuitable for metallurgical purposes owing to high ash content; used entirely for goods services.
(4) Joint Sawang	Grade I	63,613	Inferior coking coal similar in quality to Joint Bokaro coal, but more inferior in quality as coking coal; used entirely for goods services.
(5) Jarangdih	Grade II	27,788	Very inferior coal, unsuitable for metallurgical purposes; used for slow goods and passenger services.
(6) Argada	Selected B	90,070	Inferior grade coal unsuitable for metallurgical purposes; used for mail, express and goods services.

104. Capital invested in and financial results of the working of railway collieries during 1952-3.—Capital invested in, and financial results of, railway collieries during 1952-3 are given below:—

FINANCIAL RESULTS OF WORKING RAILWAY COLLIERIES DURING 1951-2 AND 1952-3

Colliery	Total Capital outlay upto 31 March 1953	Earnings during 1952-3	Working expenses during 1952-3	* Profit or loss in working during 1952-3
1	2	3	4	5
1. Bhurkunda	63,30,288	24,50,663	22,38,645	+2,17,752
2. Kargali	1,99,07,396	84,48,973	80,56,311	+3,33,086
3. Kurharbaree	55,01,506	23,30,721	45,98,774	—22,54,946
4. Serampore	64,84,422	21,06,688	40,61,884	—19,75,841
5. Bokaro	1,03,15,764	2,12,46,637	1,03,03,035	+1,09,64,737
6. Sawang	17,04,267	8,42,438	11,95,198	—3,54,166
7. Jarangdih	81,17,200	3,49,284	8,41,481	—4,75,890
8. Kurasia	45,36,976	34,47,809	29,94,538	+4,54,725
9. Talcher	71,00,721	19,33,096	26,26,147	—6,90,100
10. Argada	1,81,607	13,06,834	9,54,260	+3,53,519
11. Deulbera	26,42,903	13,65,527	18,21,430	—4,52,074
TOTAL	7,28,23,050	4,58,28,670	3,96,91,703	+61,20,802

* In arriving at these results 'opening' and 'closing' stock of coal has also been taken into consideration in the last column and as such it will not be possible to arrive at these figures on the basis of figures of earnings and expenses shown in the table.

The plus and minus signs against the figures in the last column represent profit and loss respectively. The capital invested represents the fixed and floating assets, less sinking fund.

The figures given under column 2 above are provisional as the accounts for the period ending 14 August 1947 have not yet been finally closed.

Working of Railway Collieries for the year 1952-3 disclosed a net profit of Rs. 61,20,802 against Rs. 11,29,475 in the previous year. The improvement in the position has been brought about mainly due to increase in output, suspension of work of removal of over burden by mechanised methods by the Indian Mining Construction Company and enforcement of utmost economy all round.

Further reduction in working cost with consequent increase in profit will be possible when the surplus labour of about two thousands, which is mainly centred at the Giridih Railway Collieries, is retrenched. Due to the closing down of Bhadua Incline in Serampore (Giridih) Colliery a number of miners were retrenched, but the question of general retrenchment of the surplus labour is under active consideration of Government.

105. Railway collieries and labour.—The relations between the labour and the administration were cordial and there was no labour trouble in any colliery during the year.

The general health of the labour and sanitation were satisfactory.

The following amenities were provided for the labour employed in the Railway collieries during the year:

(1) 90 miners' houses built under the Coal Mines Welfare Scheme were handed over to the Bokaro Colliery and occupied by the miners.

(2) Pit head baths (one for males and the other for females) in the Kurasia Colliery were opened for use of the labour.

(3) The construction of miners' quarters, creche and nurses' quarters was completed in the Deulbera Colliery.

CHAPTER VIII

RAILWAY EQUIPMENT AND STORES

106. The Railway Stores Enquiry Committee, 1950-1.—In paragraph 89 of the last year's report it was stated that the various recommendations of the Railway Stores Enquiry Committee had been accepted by the Ministry of Railways, and that arrangements had been made for their implementation. No finality could, however, be reached regarding one of the main recommendations regarding the changes in the arrangements for procurement of railway stores. This matter remained under examination in consultation with the Ministry of Works, Housing and Supply. In March 1953, a Stores Purchase Committee was appointed by that Ministry to examine the scope and functions of the Central Purchasing Organization in India and the extent of powers which could be delegated to the indenting departments for direct purchase, etc. Accordingly it was decided to maintain *status quo* till the investigation by the Stores Purchase Committee was completed.

As a result of the drive instituted by the Railway Board in 1951, the stores balance, *i.e.*, the value of stores held in stock by railways, which stood at Rs. 63·41 crores on 31 March 1952, was reduced to Rs. 57·20 crores on 31 March 1953, thus showing a reduction of Rs. 6·21 crores. The reduction of Rs. 10 crores recommended by the Railway Stores Enquiry Committee could not materialize as the main recommendation of the Committee regarding changes in procurement arrangements and consequent reduction in stocking limits was not implemented.

107. Value of railway equipment and stores purchased—

(a) *Through the Ministry of Works, Housing and Supply.*—The comparative figures of the value of Railway equipment and stores ordered by railways through the Ministry of Works, Housing and Supply during 1951-2 and 1952-3 are given below:

VALUE OF STORES ORDERED THROUGH THE MINISTRY OF WORKS, HOUSING AND SUPPLY

(Figures in lakhs of Rs.)

Year	Total value of railway equipment & store ordered	Value of railway equipment and stores ordered through the Ministry of Works, Housing & Supply	Percentage of column 3 to 2
1)	(2)	(3)	(4)
1951-2	97,66·24	39,21·67	40·16
1952-3	**93,81·50**	**30,78·14**	**32·82**

(b) *By the Railway Board.*—As in the previous years the Railway Board continued to purchase, during the year under review, certain imported items of railway equipment and stores for Indian Railways like coaches and wagons, locomotives, boilers, petrol tanks, rail cars and underframes. The table below compares the value of railway equipment and stores purchased during 1951-2 and 1952-3:

VALUE OF STORES ORDERED BY THE RAILWAY BOARD

(Figures in lakhs of Rs.)

Year	Total value of railway equipment & stores ordered	Value of railway equipment and stores ordered by the Railway Board	Percentage of column 3 to 2
(1)	(2)	(3)	(4)
1951-2	97,66·24	14,32·31	14·67
1952-3	**93,81·50**	**14,86·06**	**15·84**

(c) *Through other Ministries.*—The value of railway equipment and stores ordered through the Ministries other than the Ministry of Works,

Housing and Supply during 1952-3 compares with the value of similar purchases made during 1951-2 as under:

VALUE OF STORES ORDERED THROUGH MINISTRIES OTHER THAN THE MINISTRY OF WORKS, HOUSING AND SUPPLY

(Figures in lakhs of Rs.)

Year	Total value of Railway equipment & stores ordered	Value of railway equipment and stores ordered through other Ministries	Percentage of column 3 to 2
(1)	(2)	(3)	(4)
1951-2	97,66·24	189·44	1·94
1952-3	**93,81·50**	**139·61**	**1·48**

(d) *Direct by Railways.*—The value of orders placed directly by Railways during 1951-2 and 1952-3 are shown in the table given below:

VALUE OF STORES ORDERED DIRECT BY RAILWAYS

(Figures in lakhs of Rs.)

Year	Total value of railway equipment and stores ordered	Value of railway equipment and stores ordered directly by Railways	Percentage of column 3 to 2
(1)	(2)	(3)	(4)
1951-2	97,66·24	*42,22·82	43·24
1952-3	**93,81·50**	**46,77·69**	**49·86**

*This excludes 189·44 lakhs shown in the table under (c) above.

The figures shown in the above tables for the year 1951-2 are in respect of payments made during the year, while the figures for 1952-3 represents the value of orders placed. The total of payments made in respect of equipment and stores during 1952-3 was Rs. 92,15 lakhs, a summary of which is given in the statement below:

PAYMENTS MADE FOR RAILWAY MATERIALS DURING 1952-3

(Figures in lakhs)

Particulars	Imported materials: Purchased direct	Imported materials: Purchased through agents in India	Imported materials: Total imported materials	Indigenous materials	Total: 1952-3	Total: 1951-2
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(A) Bridge work and its parts, fittings and special fastenings	..	1	1	12	**13**	9
(B) Engineering plant and components including all hand and power machinery	34	11	45	11	**56**	29
(C) Workshop machinery, plant and equipment including pneumatic machinery and tools	31	66	97	32	**1,29**	1,73
(D) Permanent way material and track tools	19	16	35	5,41	**5,76**	6,12
(E) Rolling-stock	13,31	6,85	20,16	9,14	**29,30**	29,18
(F) Building materials, water mains, sewage system and track and yard enclosing materials and signal and interlocking materials, etc.	71	27	98	1,39	**2,37**	1,70
(G) Stores, hardware, copper, tin and zincware, all leather canvas and India rubber in bulk, materials painters' stores, timber and fuel oil, etc.	29	86	1,15	23,51	**24,66**	26,04
(H) Electrical and train and locomotive lighting plants and materials, etc., and telegraph and telephone equipment	13	1,45	1,58	1,41	**2,99**	3,89
All other stores	21	2,14	2,35	22,74	**25,09**	28,62
TOTAL	15,49	12,51	28,00	64,15	**92,15**	97,66

The detailed figures are given in Appendix A of Volume II of this Report.

108. Intake of indigenous equipment and stores.—The total payments made for railway equipment and stores during 1952-3 amounted to Rs. 92,14·71 lakhs. Of this the value of direct imports was Rs. 15,49·06 lakhs and imported materials purchased in India accounted for Rs. 12,50·75 lakhs. Thus the imported materials accounted for Rs. 27,99·81 lakhs. The balance of payments were for equipment and stores of Indian manufacture or of indigenous origin which accounted for 69·62 per cent of the total expenditure. The comparative figures for 1951-2 and 1952-3 are given below:

TOTAL VALUE OF PURCHASES OF STORES

(Figures in lakhs of Rs.)

Year (1)	Amount of payments made for equipment and stores imported direct (2)	Amount of payments made for imported equipment & stores purchased in India (3)	Amount of payments made for railway equipment & stores of Indian manufacture or of indigenous origin (4)	Total payments made for imported and indigenous railway equipment & stores (5)	Percentage of column (4) to(5) (6)
	Rs.	Rs.	Rs.	Rs.	
1951-2	18,91·81	10,40·85	68,33·58	97,66·24	69·97
1952-3	**15,49·06**	**12,50·75**	**64,14·90**	**92,14·71**	**69·62**

109. Rationalized distribution of surplus stock.—By a constant review of stock position of various items of stores, items which are in excess of the requirements of an individual railway are treated as 'surplus' for transfer to other railways. Such 'surplus' stores on 31 March 1951 were valued at Rs. 10·19 crores. By 31 March 1953 these had dropped to Rs. 5·43 crores, after taking into account the further items declared as 'surplus' after 31 March 1951. In addition to the actual reduction in accumulated stocks, certain items have been earmarked against future requirements.

110. Stores balances.—The statement below compares the total stores balances at the end of 1952-3 with those at the end of 1951-2. These figures are provisional as the accounts for the period 1 April to 14 August 1947, have not so far been closed and the balances carried forward in the case of *ex*-States' Railways have not yet been finalized.

VALUE OF TOTAL STORES BALANCES ON RAILWAYS DURING 1951-2 AND 1952-3

(In lakhs of rupees)

	1951-2	**1952-3**
Central	12,24	**11,09**
Eastern	22,73	**15,72**
Northern	*4,86	**7,45**
North Eastern	*7,50	**7,54**
Southern	7,15	**7,09**
Western	6,53	**6,01**
Other Railway units	2,40	**2,30**
TOTAL	*63,41	**57,20**

* Revised

There is an overall decrease of Rs. 6,21 lakhs in the balance at the end of 1952-3 as compared with the balance at the end of 1951-2. The chief factors responsible for the decrease of the balance by Rs. 6,21 lakhs are disposal of surplus stock and less purchases on account of reduction in the number of cards dealt with in the grain shops and also due to fall in the purchase price of certain commodities.

111. Disposal of scrap.—Considerable quantities of scrap material become available in Railway workshops and on line every year. This material is collected in various scrap yards and after reclaiming such scrap

as may be of use to the Railways, the rest is disposed of to trade. The total value of scrap held by Railways on 31 March 1953 was Rs. 1·7 crores. Ferrous scrap is distributed through the Iron and Steel Controller, who allots quotas to various re-rolling mills, foundries, Ordnance factories and other users, excepting that cast iron scrap required by the firms engaged in manufacturing cast iron sleepers and other materials for the railways is allotted by the railways themselves to such firms. Ferrous scrap which the Iron and Steel Controller is unable to distribute and non-ferrous scrap and other miscellaneous scraps, such as timber off-cuts, etc., is sold by railways by public auctions.

112. Timber supply situation.—The improvement in the supply position of timber which started from the third quarter of 1951, continued to be maintained during the year under review. This refers to all kinds of timber including imported timber, *i.e.*, Burma Teak.

The table below shows the quantity demanded and the quantity passed after inspection during 1952-3:

Period	Quantity indented	Quantity passed against all contracts including previous indents
	Tons	Tons
II Quarter 1952	8,045	14,614
III Quarter 1952	2,704	8,065
IV Quarter 1952	2.230	5,015
I Quarter 1953	3,497	5,166
TOTAL	16,476	32,860

The excess quantity passed represents the backlog of supplies outstanding against previous indents.

113. Wooden sleeper purchase organization.—The Sleeper Groups purchased the following wooden Sleepers during 1952-3:

	Broad gauge	Metre gauge	Narrow gauge	Specials
	No.	No.	No.	No.
(1) Northern group	94,707	331,771	136,265	126,763
(2) Southern group	41,899	171,131	—	15,251
(3) Eastern group	177,346	334,971	71,307	76,992
TOTAL	313,952	837,873	207,572	219,006

The total expenditure of the sleeper groups during the year, together with the value of the sleepers and specials purchased by them, are given below:

	Expenses of the group	Value of purchases made
	Rs. A. P.	Rs. A. P.
(1) Northern group	96,610 0 0	53,47,967 4 0
(2) Southern group	40,350 7 0	28,76,133 0 0
(3) Eastern group	3,60,277 6 0	81,33,038 15 0
TOTAL	4,97,237 13 0	1,63,57,139 3 0

The Sleeper Pool Organization also arranged inspection of approximately 30,925 tons timber and 2,695 nos. of planks and boards against orders placed by Director General, Supplies and Disposals for Railways.

The average price of first class sleepers in the various sleeper groups was as under:

		Broad gauge	Metre gauge	
		Rs. A. P.	Rs. A. P.	
(1) Northern group		16 15 0	7 11 0	
(2) Southern group	Private contractors	20 10 6	12 13 8	High grade species prices
	Bombay Forests	14 8 0	—	
(3) Eastern group		17 15 9	7 15 7	

At Dhilwan creosoting plant on the Northern railway 12,533 broad gauge, 58,128 metre gauge, 29,819 narrow gauge sleepers of coniferous species and 1,685 three-foot-ends of *chir* sleepers and 2,016 three-foot-ends of *fir* sleepers were treated during the year with a mixture of 40 per cent creosote and 60 per cent liquid fuel oil. The details are given in the statement below:

SLEEPERS TREATED IN CREOSOTING PLANT AT DHILWAN DURING 1952-3

	Chir				*Fir*				*Kail*			*Chir* poles
	BG	MG	NG	Ends 3-ft	BG	MG	NG	Ends 3-ft.	BG	MG	NG	Chir poles (*for PWD.*)
(i) Number of sleepers treated.	12,034	54,658	29,662	1685	449	298	117	2,016	50	3,172	40	100
(ii) Cost of treating per sleeper Rs.	4-3-1	2-5-11	2-3-5	1-6-6	4-8-8	2-12-9	2-9-9	1-9-6	4-7-7	2-8-11	2-8-10	67-13-0 per pole
(iii) Average absorption of mixture per cft. in lbs.	5·30				6·43				6·53			21·39

Besides these 100 *chir* poles were treated for the Punjab (Public Works Department) Electricity Branch. *Chir* sleepers were treated by the Rueping process and the *fir* and *kail* by the Full-cell process. 100 *chir* poles for Public Works Department were treated by the Full-cell 50 per cent creosote and 50 per cent liquid fuel oil.

At Naharkatiya treating plant on the North Eastern Railway 52,013 broad gauge and 77,309 metre gauge sleepers of *hollong, mekai, hellock, jutuli* species were treated during the year with creosote and sleeper oil in 50:50 proportion. The average absorption was 6·2 lb. per cft. and the cost of treatment per sleeper was Rs. 4-14-0 per broad gauge and Rs. 2-6-0 per metre gauge sleeper.

114. Purchase of wooden, cast iron and steel sleepers.—The number of sleepers of various types purchased by Government Railways during the year is given below:

	Wooden	Cast Iron	Steel	Total
	Nos.	Nos.	Nos.	Nos.
Broad Gauge	332,542	347,903	76,856	757,301
Metre Gauge	1,057,914	55,209	390,481	1,503,604
Narrow Gauge	189,485	180	2,930	192,595
Total	1,579,941	403,292	470,267	2,453,500

The relative position of the various kinds of sleepers may be seen from the following percentages based on the total number of sleepers on track by Government Railways:—

	Wood	Cast Iron	Steel
Broad Gauge	14·15%	39·41%	46·44%
Metre Gauge	62·91%	3·88%	33·21%

115. Cement supply situation.—Against the demand for cement from different Railways, the Ministry of Commerce and Industry makes quarterly allotments of cement based on the estimate of the production in each quarter. Allotments are made according to the different cement zones, which are under the control of Regional Honorary Cement Advisers.

During the year 1952-3 Railway administrations required 212,836 tons of cement in order to meet their urgent requirements and the demand for this quantity was placed on the Ministry of Commerce and Industry. The actual quota allotted against this demand was 180,900 tons, *i.e.*, 85 per cent.

116. Steel supply situation.—There was a set-back in the supply position of some sections of steel and sheets during early part of 1953, on account of labour trouble in the Indian Iron and Steel Co. The supply position of High tensile channels, Spring steel, M.S. plates and Panel plates continued to be difficult as the production in the country was not adequate; and the demands of the Railways could not, therefore, be met in full. The requirements of indigenous wagon builders for plates and spring steel were met with difficulty from imports.

The supply position of rails and fishplates and steel sleepers also deteriorated. Though the total tonnage of rails indented for by the Railways was 49,600 tons, there remained an outstanding of 10,900 tons at the close of the financial year.

The outstandings against railways demands of various categories of steel at the close of the financial year are given below:

	Tons
Steel sleepers	18,900
Sheets	9,300
Plates	22,900
Panel plates	2,800
Spring steel	6,500
Rails & fishplates	10,900
High tensile	6,000

117. Supply position of vital equipment and stores—

Imported Stores.—The following are the important stores for which crossmandates were issued to Director General, India Stores Department, London during the period under review:

(1) Boilers,
(2) Spares for locomotives,
(3) Spares for caprotti valve gear,
(4) Plate glass and glass clear sheets,
(5) Wheels and axles,
(6) Signals fog detonating,
(7) Timkea roller bearings,
(8) Pine split M.S. taper,
(9) Cranes and spare parts,
(10) Cables electric and telephone cables,
(11) Hunt spiller piston springs and
(12) Copper plates.

The general supply position of imported stores *ex*-United Kingdom improved slightly during the period under review.

The important items which were crossmandated to India Supply Mission, Washington during the period under review were spares for locomotives, oscillograph equipment and signal stores.

Shipment of gauge glasses from Australia against one indent of late Controller of Imported Railway Stores has almost been completed.

Indigenous stores.—The position regarding vital items of indigenous stores is given below:

Wheels, tyres and axles.—Messrs. Tatas are the only indigenous manufacturers of these stores. Their capacity is fully utilized against the Wagon Building Programme and the maintenance requirements of Indian Railways. Since the total capacity is not sufficient to meet the demand of railways, imports had to be resorted to. The Railway Board have, in consultation with Tatas, arranged for increasing the indigenous capacity.

Steel castings.—The indigenous capacity for Standard Steel Castings was surplus and the deliveries were generally satisfactory. Sufficient capacity is now available for non-standard steel castings also and supply was satisfactory. Sometimes delays took place due to the time required for making patterns, tools, dies, jigs, etc., for heavy and intricate castings, the delays had been appreciable.

Permanent way materials.—Supply position of steel continues to be the limiting factor in the production of track materials. There was, therefore, no appreciable improvement in the delivery of fabricated permanent way materials to the railways.

Structurals.—Shortage of steel plates continues to be the main bottleneck in the manufacture and supply of structurals against railway demands for wagon manufacture, etc.

Fire bricks.—Supply position of this store has been satisfactory.

Cast Iron Pipes and Specials.—The indigenous capacity is very limited and cannot cope with the demands received by the Director General, Supplies and Disposals. The available capacity was fully booked and the delivery against the Indian Railways' demands was, therefore, affected. With the amalgamation of Steel Corporation Bengal and Indian Iron and Steel Company supply of these stores is anticipated to improve slightly during the next two years.

118. Theft of railway property.—Twenty-seven cases of thefts of stores and other valuable materials amounting to Rs. 1,26,745 were reported in the course of the year. Ten of these cases were referred to the Police for investigation. In two out of three cases of prosecution conviction of the culprits was secured. The third one is still pending with the court. Police investigations are still in progress in the remaining seven cases.

No clues of the thefts could be found in five cases and hence responsibility for loss could not be fixed in these cases. Nine cases are still being enquired into by Departmental Committees. As regards the remaining three cases, the suggestions of the enquiry committees to tighten up security measures and to take disciplinary action against the staff have been implemented.

CHAPTER IX

STAFF

119. Number of staff.—The total number of employees (permanent and temporary) on all Indian Railways and in the office of the Railway Board and other offices subordinate thereto, excluding staff employed on construction. at the end of 1952-3 was 931,313 as compared with 926,639 at the end of 1951-2. The total route mileage at the end of the year was 34,275.

120. Cost of staff.—The statement on the next page shows the number and cost of all staff, Classes I, II, III and IV, permanent and temporary, open line and construction, employed on Government Railways during the years 1951-2 and 1952-3. The labour employed by contractors is not included.

A comparison of the figures for 1952-3 with those for the previous year shows that the total number of staff employed on the open line of Government Railways increased by 4,727 during the year, while the number of construction staff decreased by 1,864.

The total cost of staff including that of staff on loan from the Indian Audit and Accounts Service increased by Rs. 5,18,22,311 during the year as compared with the previous year. The increase in expenditure is chiefly due to the increase in staff, annual increments, payments of arrears on account of implementation of Central Pay Commission scales of pay and Joint Advisory Committee's recommendations, provision of full leave reserve as a result of the Adjudicator's award, extension of Hour of Employment Regulations to the *ex*-States railways and payments of increased dearness allowance for full year as against only 10 months during the previous year.

121. Direct recruitment to the superior railway services.—Forty-two appointments were made to the superior railway services by direct recruitment during the year. The details by departments are given below:—

Department	*Number*
(1) Civil Engineering	6
(2) Signal Engineering	1
(3) Electrical Engineering	5
(4) Transportation (Traffic) and Commercial	...
(5) Transportation (Power) and Mechanical Engineering	20
(6) Accounts	2
(7) Stores	1
(8) Others	7
TOTAL	42

122. Promotions to superior railway services.—Four promotions were made during the year from Class II and Class III services. The promotions were made against existing vacancies.

123. Railway Service Commissions.—The Railway Service Commissions with headquarters at Calcutta and Bombay continued to conduct recruitment of Class III staff for the Railways. The Calcutta Commission recruited 5,621 staff for the Eastern, North Eastern and Northern Railways, the Railway Clearing Accounts Office and the Chittaranjan Locomotive Works, while the Bombay Commission met demands for 8,690 staff from the Western, Central and Southern Railways.

124. Confirmation of temporary staff.—Railway Administrations continued to review the temporary posts with a view to converting them into permanent posts and to confirming temporary staff in available vacancies. Consequent on the regrouping of the railways, the question of determining the basis for preparing common seniority lists of staff of the various integrating units has been under consideration and on this account the rate of

NUMBER AND COST OF STAFF ON GOVERNMENT RAILWAYS DURING 1951-2 AND 1952-3

Railway	Year	NUMBER OF STAFF ON 31 MARCH — OPEN LINE — Classes I & II	OPEN LINE — Classes III & IV	OPEN LINE — Total	CONSTRUCTION — Classes I & II	CONSTRUCTION — Classes III & IV	CONSTRUCTION — Total	Staff on loan from the Indian Audit and Accounts Service	†COST OF STAFF DURING THE YEAR ENDING 31 MARCH — Classes I & II	Classes III & IV	Total	Total including staff on loan from the Indian Audit and Accounts Service
Central	1952	358	167,709	168,067	..	..	..	1	51,69,677	21,19,16,223	21,70,85,900	21,71,19,000
	1953	**369**	**167,302**	**167,671**	..	..	..	**1**	**51,36,841**	**21,90,49,355**	**22,41,86,196**	**22,42,20,396**
Eastern	1952	566	250,705	251,271	..	211	211	..	79,02,399	34,84,47,821	35,63,50,220	35,63,50,220
	1953	**529**	**246,587**	**247,116**	..	**31**	**31**	..	**74,67,718**	**35,39,25,315**	**36,13,93,033**	**36,13,93,033**
Northern	1952‡	272	126,902	127,174	6	3,281	3,287	..	27,52,008	15,13,54,293	15,41,06,301	15,41,06,301
	1953‡	**382**	**131,143**	**131,525**	**7**	**1,438**	**1,445**	..	**38,05,335**	**17,74,84,404**	**18,12,89,739**	**18,12,89,739**
North Eastern	1952	259	103,506	103,765	..	..	..	..	28,36,655	12,75,61,851	13,03,98,506	13,03,98,506
	1953	**302**	**109,150**	**109,452**	..	..	..	**1**	**33,72,467**	**13,79,79,444**	**14,13,51,911**	**14,13,59,615**
Southern	1952*	331	144,486	144,817	..	163	163	1	40,84,546	18,46,91,070	18,87,75,616	18,88,09,622
	1953	**348**	**146,770**	**147,118**	**3**	**358**	**361**	**1**	**42,26,397**	**18,56,98,529**	**18,99,24,926**	**18,99,55,206**
Western	1952	309	112,434	112,743	..	1,529	1,529	..	33,28,208	14,91,83,167	15,25,11,375	15,25,11,375
	1953	**340**	**109,659**	**109,999**	**2**	**1,487**	**1,489**	..	**39,91,804**	**14,83,66,356**	**15,23,58,160**	**15,23,58,160**
Railway Board and other Railway offices.	1952	136	9,902	10,038	..	..	..	2	24,29,018	1,52,87,445	1,77,16,463	1,77,93,418
	1953	**164**	**9,556**	**9,720**	..	..	..	**2**	**26,86,469**	**1,55,77,686**	**1,82,64,155**	**1,83,34,604**
Total	1952*	2,231	915,644	917,875	6	5,184	5,190	4	2,85,02,511	1,18,84,41,870	1,21,69,44,381	1,21,70,88,442
	1953	**2,434**	**920,167**	**922,601**	**12**	**3,314**	**3,326**	**5**	**3,06,87,031**	**1,23,80,81,089**	**1,26,87,68,120**	**126,89,10,753**

* Represents revised figures for 1952 due to changes made by the Railway Administrations in the figures published last year.
† The figures of cost of all Railways represent pay, allowances, passages, provident fund contributions, gratuities and the value of grainshop concessions.
‡ Provisional figures.

confirmation of temporary staff slowed down to some extent. All promotions on the regrouped railways have been made on a provisional basis after regrouping. The recommendations of the Seniority Committees appointed on the regrouped railways were under consideration.

The position of conversion of temporary posts into permanent and the confirmation of temporary staff as on 31 March 1953 was as follows:

Total number of temporary posts converted into permanent during the year	9,482
Total number of temporary staff confirmed during the year	26,020
Total number of temporary staff remaining unconfirmed (This excludes (1) staff under training or on probation (2) workshop staff with less than three years service, and (3) casual labour)	95,565
Number of temporary staff under training or on probation	21,883
Number of staff whose posts were not likely to be required permanently	56,602
Number of workshop staff with less than three years service	15,767

125. Disposal of surplus staff.—During the year under review the position regarding the absorption of surplus staff in alternative vacancies further improved. About 2,900 men were absorbed in alternative vacancies and about 80 men only had to be discharged and even this was mainly because they refused alternative employment.

126. Railways and labour.—The relations between the Railway Board and labour continued to be cordial during the year under review.

127. Meetings with Railwaymen's Unions—*All-India Railwaymen's Federation.*—A quarterly meeting between the Railway Board and the All-India Railwaymen's Federation was held on 1 August 1952, at which eight subjects relating to service conditions of staff were discussed. These included the extension of the existing educational facilities to Class IV staff, question of the abolition of selection posts for the posts carrying pay below Rs. 350 and the uniformity of procedure of selection on all railways.

Another quarterly meeting between the Railway Board and the All-India Railwaymen's Federation was held on 3 December 1952, at which some of the subjects discussed related to the question of the inclusion of Poona as 'B' class for the purpose of grant of house rent allowance; the grant of *terai* and jungle allowance to railway staff stationed in the Siliguri sub-division of the North Eastern Railway and the question of the exemption of *ex*-Company Accounts staff from passing the departmental examination.

Indian National Railway Workers' Federation.—A quarterly meeting between the Railway Board and the Indian National Railway Workers' Federation was held on 17 April 1952, at which some of the subjects discussed related to the expeditious confirmation of staff officiating in higher grades, protection of staff against increase in the retail price of wheat and the question of making special provision for treatment of staff and their family members suffering from tuberculosis.

The next quarterly meeting between the Railway Board and the Indian National Railway Workers' Federation was held on 29 and 30 July 1952, at which nine subjects were discussed, which included the question of the reclassification of cities on the basis of 1951 census for the purpose of house rent and compensatory allowances, the working of the permanent negotiating machinery on railways at lower levels and the inadequacy of daily allowance to lower paid staff.

The Indian National Railway Workers' Federation held their Annual Convention at Bhavnagar on 26, 27 and 28 October 1952, and the points raised in the resolutions passed by them were examined by the Railway Board and the results of the examination were communicated to that Federation.

There was another quarterly meeting between Railway Board and the Indian National Railway Workers' Federation which was held on 8 December 1952, at which nine subjects were discussed, which included the calculation of special contribution to staff on retirement on their officiating pay, the payment of special allowance to staff detailed for break-down duties and the absorption of grainshop staff.

128. Permanent negotiating machinery for settlement of disputes.—The permanent negotiating machinery which was set up on railways with effect from 1 January 1952, with a view to maintaining contact with labour and resolving disputes and differences which may arise between them and the Administration, functioned satisfactorily during the period under review. The reports received from railways indicated that during this period on all the six Indian Government Railways, 63 meetings were held at Headquarters level and about 700 meetings were held at district/divisional/workshop level, and that the discussions were held in a cordial atmosphere, that the subjects were discussed in a free and frank manner and that some of the suggestions put forward which were within the competence of the railway administrations were accepted by the railway administrations.

At the second tier of the machinery, quarterly meetings were held between the Railway Board and the All-India Railwaymen's Federation and the Indian National Railway Workers' Federation on five occasions as indicated in the paragraph above.

There was no occasion, during the period under review for reference to an *ad hoc* Railway Tribunal as provided for at the third tier under the machinery but the demand of the Federations for reference to an *ad hoc* Tribunal on certain issues raised by them, was under examination.

129. Dearness allowance.—The scale of dearness allowance admissible to railway staff referred to in paragraph 127 of the last year's report continued unchanged during 1952-3. It was, however, recognized by Government that some portion of the dearness allowance granted may have to remain as a permanent measure and accordingly they decided to appoint a Committee to conduct an investigation into and advise them as regards the exact portion of dearness allowance given to Central Government servants that should be treated as pay. The Committee set up consisted of:

Chairman	Shri N. V. Gadgil, M.P.
Non-official members	1. Shri Khandubhai Desai, President, All-India Trade Union Congress.
	2. Shri S. Guruswami, General Secretary, All-India Railwaymen's Federation.
Official members	1. Shri J. Dayal, Joint Secretary, Ministry of Finance.
	2. Shri P. N. Saxena, Director, Establishment, Railway Board.
Secretary	Shri S. K. Majumdar, Deputy Secretary, Ministry of Finance.

The terms of reference to the Committee were as follows:

> "Taking into consideration the rates of dearness allowance that have been sanctioned to date for Central Government servants, and the level at which cost of living index figures are likely to stabilize in the foreseeable future, to recommend the percentage of the dearness allowance now given to Central Government servants which should be allowed to be treated as pay for all purposes in future, provided that by doing so the present total of pay and dearness allowance is not enhanced."

The Dearness Allowance Committee commenced to function from 15 July 1952, and submitted its report to Government on 4 October 1952. The Committee made the following recommendations:

(*a*) 50 per cent of the dearness allowance now granted to Civil Government servants in the various groups up to a pay of Rs. 750 p.m. should be treated as pay and should count for the following purposes:

(i) retirement benefits, *viz.*, contributory provident fund, pensions and gratuities;

(ii) travelling allowance;

(iii) compensatory allowance;

(iv) house rent allowance; and

(v) recovery of house rent from Government servants in occupation of Government quarters. But in order to mitigate a sudden drop in the net emoluments, the recovery of rent on the national addition to pay should be at a concessional rate of 5 per cent (instead of the usual 10 per cent) until the Government servant receives promotion or occupies a quarter of a different class;

(*b*) the above recommendation should be given effect to from 15 July 1952;

(*c*) the *ad hoc* increases in dearness allowance that have been granted to Government servants in the lower pay groups should not be reduced until the All-India cost of living index reaches the figure of 305.

These recommendations have been accepted by Government effective from April 1953, the recommendation relating to retirement benefits only having effect from 15 July 1952.

130. Grainshops.—Food control was abolished in the Madras State with effect from 15 June 1952, though cereals continued to be supplied in some areas through Government-run Fair Price Shops. In Uttar Pradesh control was lifted from wheat with effect from 1 July 1952, though it continued to be supplied at the ration shops at the scale of 4 *chhattaks* per head per day. Since the Uttar Pradesh Government were unable to supply rice and coarse grains to the Railway grainshops, arrangements were made through the Ministry of Food and Agriculture for supply of the total quantum of cereal ration to the railway employees holding concessional cards in wheat.

As the conditions of scarcity obtaining generally in the country, which necessitated the introduction of the facility of issuing cereal ration at controlled rates to Railway employees who had not elected the grainshop concessions through the railway grainshops, improved considerably, it was decided that this facility should be withdrawn with effect from 1 March 1953, in all areas excepting statutory rationed areas and those derationed areas where the State Governments had established Fair Price Shops but expressed their inability to register the railway employees in those shops. This facility was, withdrawn in Uttar Pradesh earlier, *i.e.*, from 1 December 1952.

As the position regarding availability of sugar in the market also improved, it was decided that the sale of sugar through the railway grainshops should be discontinued after the existing stocks were exhausted except at places where the civil regulations required the railway grainshops to sell this commodity.

The statistics given below indicate the principal activities of the grainshops organization during the year 1952-3 as compared with the previous year :

STATISTICS REGARDING GRAINSHOPS

—	March 1952	**March 1953**	Remarks
(1) Number of shops functioning			
Static	301	**265**	Decrease due to reduction in the number of ration card holders.
Mobile	82	**64**	
Total	383	**329**	
(2) Number of staff served at the shops			
(a) At concessional rates	229,000	**192,000**	Decrease due to (i) staff becoming ineligible for the concession on account of their pay reaching Rs. 250/ or above, (ii) retirement and (iii) employees opting out in favour of cash dearness allowance.
(b) At controlled rates	308,000	**187,000**	Decrease due to withdrawal of grainshops facility in derationed areas.
Total	537,000	**379,000**	
(3) Principal articles sold	Mds.	**Mds.**	
(a) Cereals—			
(i) At concessional rates	4,037,000	**3,737,000**	Decrease due to reduction in the number of card holders.
(ii) At controlled rates	2,551,000	**1,771,000**	
(b) Pulses	918,000	**721,000**	Decrease due to reduction in the number of concessional card holders.
(c) Cooking oil	379,000	**325,000**	
	Rs.	**Rs.**	
(4) Total purchases	18,18,29,000	**14,44,66,000**	Decrease due to reduction in the number of card holders.
Total sales	9,32,04,000	**7,38,48,000**	
Cost price of commodities sold	17,65,67,000	**14,28,84,000**	
Direct loss on sales	8,33,63,000	**6,90,36,000**	
Indirect loss (cost of staff, freight and other overheads).	1,70,75,000	**1,56,30,000**	
(5) The average relief per concessional card holder was as follows :			
Zone X	Rs. As.	**Rs. As.**	
(Kanpur, Bombay and Calcutta)	27 12	**31 11**	
Zone A			
(Towns with a population of 2,50,000 and above excluding Kanpur, Bombay and Calcutta)	27 0	**31 12**	
Zone B			
(Towns with a population of 50,000 or more but less than 2,50,000)	27 10	**33 2**	
Zone C			
(All other localities)	30 6	**33 1**	

131. Canteens.—The number of canteens on Railways which served light refreshments, and in some cases cooked meals to workers increased from 94 to 101 at the close of the year under review. The average number of employees served by these canteens also increased from about 106,000 to about 109,000 per day.

These canteens are provided at points where a considerable number of employees are concentrated such as workshops, sheds, yards, large stations, running rooms, etc. The Railway Administrations provide free of charge the necessary accommodation, sanitary and electric installations, furniture, and cooking utensils and also bear rent on sanitary and electric installations, service taxes and charges for electricity consumed. For the other expenses, the canteens are expected to be self-supporting.

The canteens are generally run departmentally but in some cases on a co-operative basis. With a view to effecting improvement and economy therein, instructions were issued to the Railway Administrations that:

(*a*) a close examination of the working of canteens should be made, and the cafeteria system introduced wherever it has not been done so far,

(*b*) every effort should be made, now that decontrol has enabled the procurement of more rice and wheat, to improve the sales in the canteens, and

(*c*) before more departmental canteens are opened, the feasibility of the existing Consumer Co-operative Societies taking over the work should be examined and wherever Consumer Co-operative Societies are formed, the question of their running canteens should be kept in view.

132. Co-operative stores.—The number of Consumer Co-operative Stores, their membership, capital, funds and transactions, etc., are shown in the following table:

(i) Number of Railwaymen's Consumer Co-operative Stores (excluding those registered as Joint Stock Companies and their branches) on Indian Railways as on 31 March 1952	44
(ii) Number of Railwaymen's Consumer Co-operative Stores organized and/or registered during 1952-3	9
(iii) Total membership of the Co-operative Stores on 31 March 1953	26,531
(iv) Total working capital of the Stores as on 31 March 1953	Rs. 17,96,666
(v) Total share capital of the Co-operative Stores as on 31 March 1953	Rs. 5,24,042
(vi) Total reserve fund of the Co-operative Stores as on 31 March 1953	Rs. 2,02,078
(vii) Purchases made during 1952-3	Rs. 35,32,912
(viii) Sales during 1952-3	Rs. 36,23,595
(ix) Gross profits for 1952-3	Rs. 1,94,603
(x) Net profits for 1952-3	Rs. 33,268

The question of reorganization of the old Joint Stock Companies and their conversion into co-operative societies was taken up for examination and remained under the consideration of the Railway Board.

Uptil the end of the year, 29 co-operative stores were provided with accommodation, on nominal rent, out of railway buildings that were available, while in the case of two societies private buildings had to be taken on hire by railways and were allotted to the societies on nominal rent, in pursuance of the Railway Board's policy in this regard. The total amount of subsidies paid to the co-operative stores during the year was Rs. 11,447 as against Rs. 3,969 for the preceding year.

Out of a sum of Rs. 33,268 earned by the societies in the shape of net profits, a considerable portion went back to the shareholders in the shape of dividend on shares, the average rate of which was 6 per cent. The societies are also realizing the advantage of distributing rebates on purchases to their members. During the year, societies at Bulser, Mysore, Lillooah, Jullundur, Khurda Road and Kanta Bhanji paid rebates to their member-purchasers at

an average rate of $1\frac{1}{2}$ per cent of the value of goods purchased by them. These societies also paid bonus to their employees to the extent of one month's salary.

The Officer on Special Duty (Co-operative Societies) who was appointed by the Railway Board in 1952, to organize and supervise the working of co-operative societies on railways, completed his survey and submitted his Report to the Railway Board, which was under their consideration at the end of the year. He also organized 15 new societies during the year, of which 9 were registered, while proposals for the remaining were pending registration with the respective Registrars of Co-operative Societies. The Officer on Special Duty also examined the working of 24 co-operative stores on different railways.

133. Labour legislation.—No important legislation concerning railway labour was enacted during the year.

134. Provision of quarters for railway staff.—In accordance with the Railway Board's policy stated in paragraph 133 of the report for 1951-2, available resources were concentrated mainly on the construction of 'A' and 'B' type quarters for essential operating staff. 'C' and 'D' and other equivalent type quarters were constructed only, if in the opinion of the General Managers, the provision of such quarters was inescapable.

During the year, 5,775 'A', 1,442 'B', 86 'C' and 20 'D' type quarters were constructed on Indian Railways. The figure for 'A' type quarters also includes 542 single room quarters built according to the recommendations of the Committee of Experts for building works, appointed by the Government of India.

135. Progress in implementation of the Adjudicator's Award.—The Adjudicator's Award was implemented by 31 March 1951, on the former Indian Government Railways in respect of hours of work and periodic rest. Instructions have been issued, and necessary steps were being taken by Railways, to provide leave reserves during the year under review.

The application of the Hours of Employment Regulations to *ex*-States Railway sections of the Indian Railways has been progressing.

The work of amending Chapter VIA of the Indian Railways Act, 1890 with a view to giving statutory force to the Adjudicator's recommendations accepted by Government had been taken in hand but the introduction of the amending Bill in Parliament was postponed in order to give preference to more urgent legislative business. This measure is, however, only formal as the recommendations of the Adjudicator embodied in the Bill have already been given effect to by the Notification of the Railway Servants (Hours of Employment) Rules, 1951.

The approximate annual recurring expenditure on account of additional staff sanctioned up to 31 March 1953 consequent on the implementation of the Adjudicator's Award amounted to Rs. 9 crores.

136. Progress in the implementation of the Central Pay Commission's recommendations.—The process of implementation of the recommendations of the Joint Advisory Committee referred to in the last year's report continued during the year under review.

Following representations regarding the inadequacy of the weightage granted in 1949 for fixation of pay of staff in the prescribed scales, Government decided that the following further benefits should be given with effect from 1 January 1952 to the staff who entered the service of the original Indian Government Railways prior to 1931:

(i) to those in service on 1 January 1952 and who had completed 25 years' service on the date and *were still in the initial recruitment grade,* one increment shall be granted, and

(ii) to those in service on 1 January 1952 and who had completed 30 years' service on that date and *were still in the initial recruitment grade,* one additional increment shall be granted.

137. Activities of the Medical Department.—The examination of the general question of the policy to be adopted in regard to expansion of medical

facilities, including measures for treatment of T. B. patients amongst railway employees and their families in future was still in progress during the year.

The activities of the medical departments of railways, curative as well as prophylactic, continued during the year with progressive improvement. Extensions were made to certain hospitals and dispensaries to provide additional beds. Preventive inoculations and vaccinations were carried out on a large scale. Proper control over malaria was maintained. Railway colonies were regularly inspected and breeding places of mosquitoes were treated with malarial oil. In certain regions special anti-malarial staff have carried out very successfully their programme of controlling malaria.

The work of Tuberculine testing and B. C. G. vaccination by the two trained teams on railways was carried on satisfactorily. A number of beds were maintained at different sanatoria of the Railway Administrations for cases suffering from pulmonary tuberculosis. Supply of costly medicines like Streptomycin, Para-amino-salicylic Chloromycetin, Penicillin, and Terramycin continued to be made with adequate safeguards.

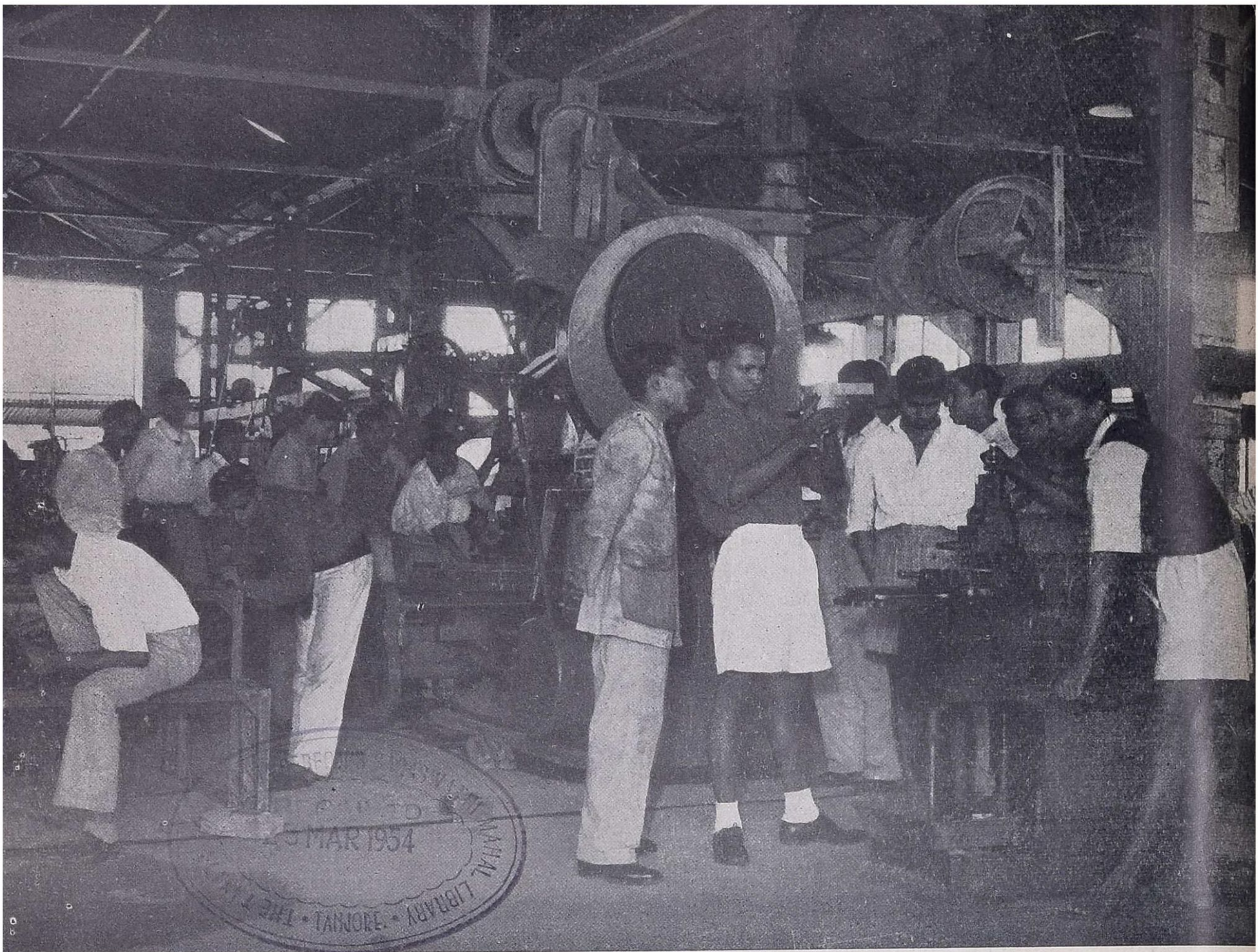
On almost all railways, the various health and maternity service centres continued to do useful work.

A statistical statement summarising the activities of the medical department and showing the up to date equipment available on the Indian Railways for the year 1952-3 is given below:

STATISTICS OF MEDICAL AND HEALTH SERVICES ON RAILWAYS FOR THE YEAR 1952-3

	Central (1)	Eastern (2)	Northern (3)	North Eastern (4)	Southern (5)	Western (6)	Total (7)
(1) Number of railway staff	167,672	244,842	132,970	109,453	147,119	110,756	912,812
(2) Cost of medical services Rs.	24,97,120	38,90,500	22,61,901	21,12,000	23,24,000	16,62,595	1,47,48,116
(3) Cost of medical services per head of staff per annum Rs.	14·89	15·9	17·01	19·3	15·79	15·01	16·32
(4) Cost of health services Rs.	28,45,126	51,18,000	34,19,184	27,15,000	17,32,000	12,76,016	1,71,05,326
(5) Cost of health services per head of staff per annum Rs.	16·96	20·9	25·71	24·8	11·77	11·52	18·61
(6) Number of :							
(i) Hospitals	11	15	15	11	12	8	72
(ii) Dispensaries	51	107	52	61	64	52	387
(iii) Beds	477	773	399	471	426	243	2,789
(7) Equipment :							
(a) Diagnostic apparatus—							
(i) X-Ray	8	19	5	5	5	10	52
(ii) Electrocardiogram	1	2	1	1	..	2	7
(b) Electro-medical and physio-Therapy—							
(i) Diathermy	2	8	5	2	2	3	22
(ii) Short-wave	5	3	6	1	..	1	16
(iii) Infra Red	3	15	6	4	2	13	43
(iv) Panto-Stat	2	1	1	..	1	1	6
(v) Ultraviolet	8	12	6	5	2	14	47
(c) Massaging and Rahibilli Apparatus	..	..	..	..	..	1	1

138. Railway Staff College, Baroda.—The College was officially opened by the Minister for Railways on the 31 January 1952. The first few months of the year under review were spent in equipping the College with the necessary minimum requirements for getting it going properly and for organizing the courses of instructions. At the same time, schemes for development and



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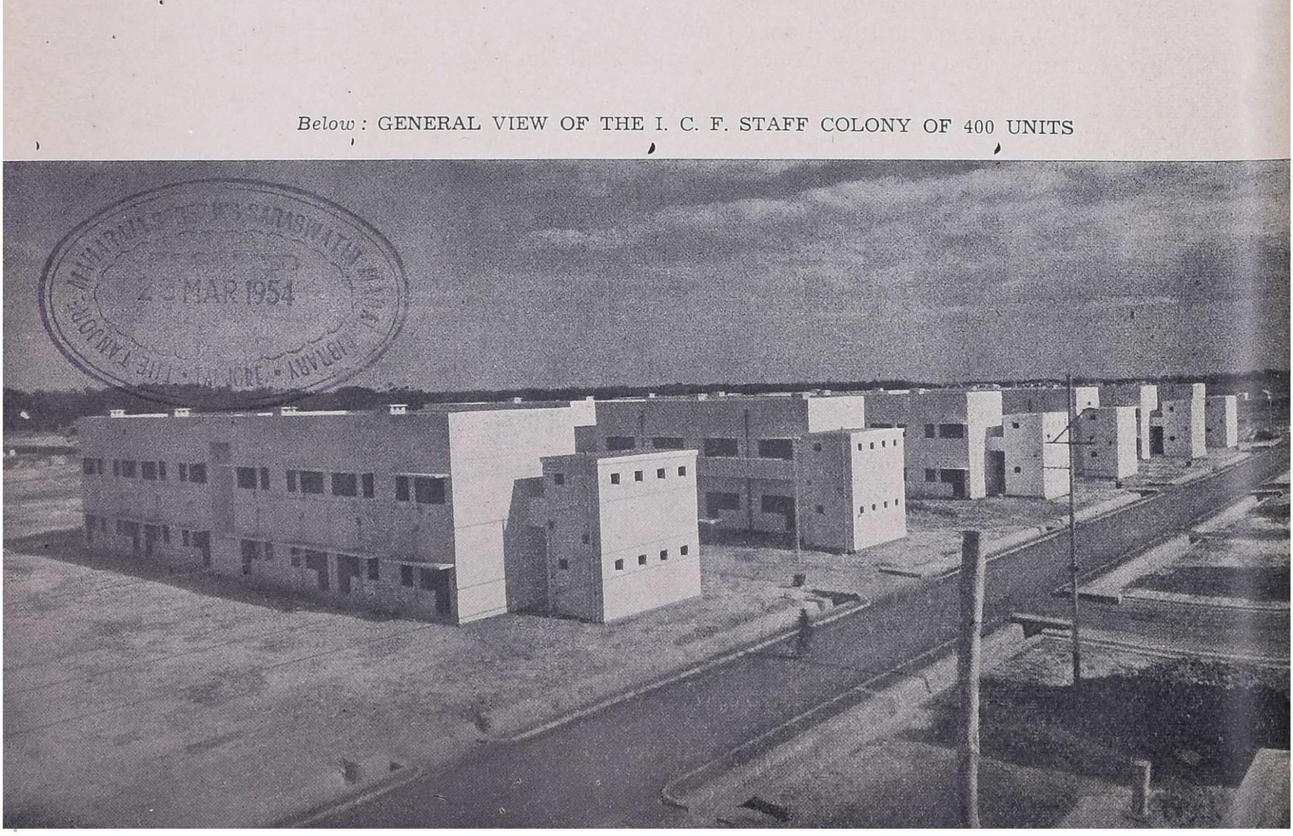
Above : AN INSTRUCTOR CHECKS THE WORK OF AN APPRENTICE IN THE SATELLITE WORKSHOP ATTACHED TO T
CHITTARANJAN TECHNICAL SCHOOL

Below : GENERAL VIEW OF THE I. C. F. STAFF COLONY OF 400 UNITS



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improvement were initiated which were finalized in the latter part of the year. Sanction has been accorded for a double storeyed building to house new Transportation and Mechanical Model Rooms at a cost of nearly Rs. $4\frac{1}{2}$ lakhs. A scheme for improvement of the water supply and provision of a swimming pool has also been sanctioned at a cost of approximately Rs. $1\frac{1}{4}$ lakhs.

During the earlier part of the year a series of probationary officers' courses were held and after five such courses which 78 probationary officers and special class apprentices attended, time was considered ripe to introduce refresher courses for junior officers. Special curricula for this purpose were drawn up and two refresher courses consisting of 33 junior officers were held before the year was out.

A special course on railway rates was also organized. The lectures were delivered by Shri Kalyanaraman, Chief Commercial Superintendent of Southern Railway. This course was attended by 16 senior officers including some in the junior administrative grade.

To supplement the instructions given in the class rooms, models were collected, audio-visual aids were used and out-door excursions organized. The College began with a sectionalized locomotive received from *ex*-Nizam's State Railway. This was housed in a special shed which for the time being is also utilized as mechanical model room. A large number of sectionalized mechanical models were collected from different railways and a bogie under-frame was also acquired for giving practical demonstration in automatic vacuum brake working and in train lighting.

A 16 mm sound projector was acquired and arrangements made with British and United States Information Services to keep up a regular supply of technical and other films of general interest.

Out-door excursions were organized in which, besides visiting the local loco. shed, goods shed and stations, the trainee officers were also taken to sites of engineering works, control offices and large yards to study control office working, yard layouts and yard operation.

The library also showed considerable progress during the period, nearly 900 departmental and latest technical books having been acquired during the year with other 500 books more on order. All the well known technical magazines were subscribed for, which were of great benefit both to the trainee officers and the instructional staff.

Proper arrangements for supervision over the gardening staff, for the maintenance of the colony and for sanitation and health were introduced during the year and encouragement was given to both in-door and out-door sports.

The total expenditure booked under the head "15-D Misc.—Railway expenditure—Railway Staff College, Baroda" for the year 1952-3 is as under:

	Rs.	AS.	P.
Works	1,13,863	5	0
Other than works	2,96,290	5	2
TOTAL	4,10,153	10	2

139. Railway schools.—During the year under review certain railways approached the Railway Board for opening of new schools, expansion of existing railway schools and payment of grants-in-aid to the non-railway educational institutions and these proposals were considered and decided on the merits of each case. The railways continued to maintain 152 railway schools.

140. Training schools on Railways.—At the beginning of the year under review 29 training schools were functioning on the railways and during the year one school was opened at Chittaranjan and another at Udaipur on the Western Railway. Most of these are Traffic Training Schools where recruits are trained in the duties of station masters, signallers, guards, booking and parcel clerks, etc. Refresher and promotion courses for staff already in service are also provided in a large number of these schools. Some railway

workshops have technical schools attached to them to train apprentices who are intended for eventual appointment as skilled artisans and supervisors in railway workshops and sheds. In some schools loco. running staff and permanent way staff are also trained. In one such school at Jamalpur, special class apprentices recruited through the Union Public Service Commission for eventual appointment as Class I officers in the Mechanical Engineering and Transportation (Power) Department are also given training.

In December 1952, the Western Railway started a training school at Udaipur for training staff in the various branches of the Traffic (Transportation and Commercial) Department.

On account of the importance of having well trained staff in the Mechanical and Electrical Engineering Departments and the variations which existed in the arrangements therefor on the several railways, the Board decided to review these existing facilities with a view to improving them. They accordingly appointed a committee of railway officers in November 1952

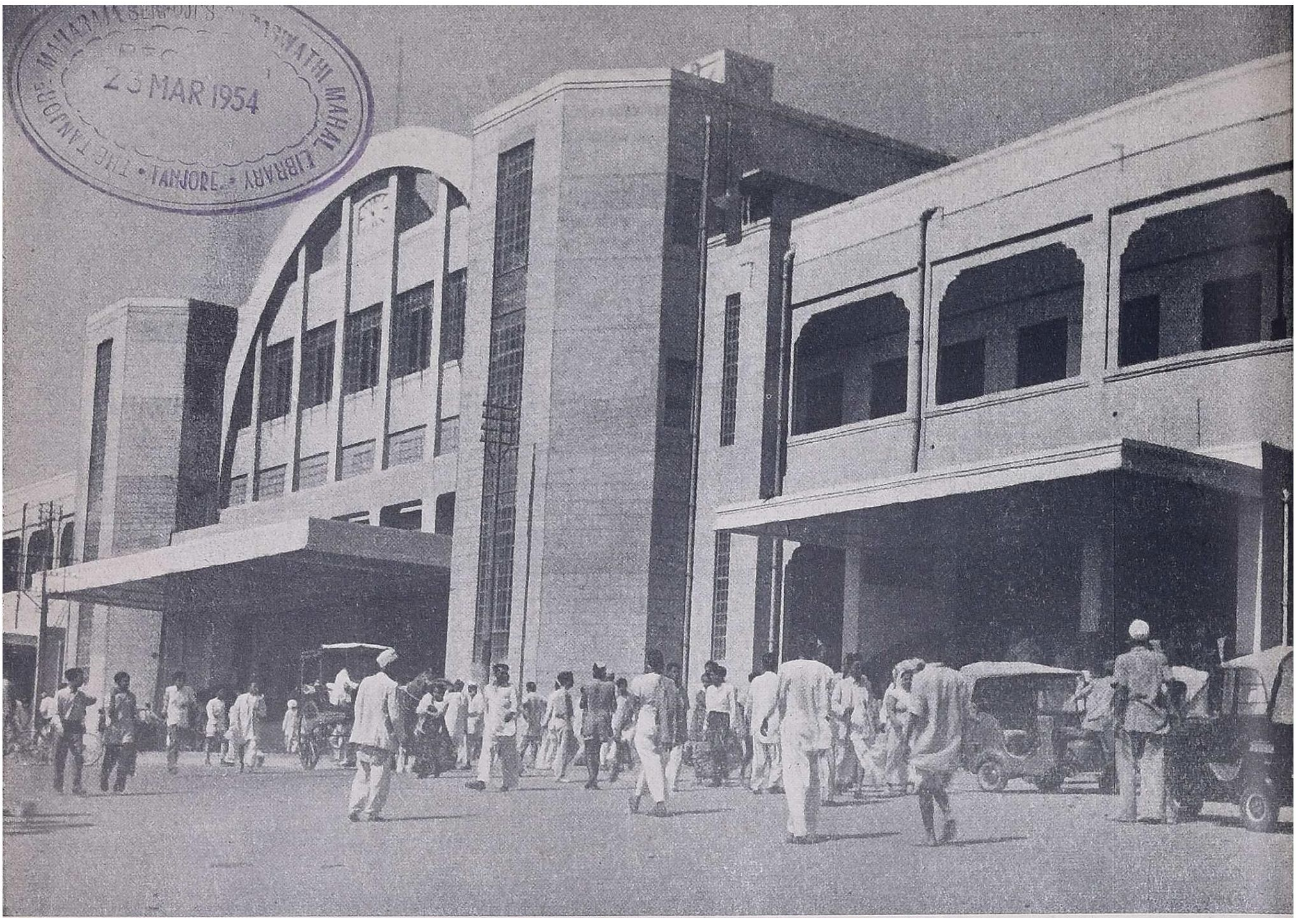
(*a*) to examine and find out the existing requirements of the railways ;

(*b*) to collect information regarding existing facilities for theoretical and practical training of apprentice mechanics and trade apprentices on the railways ;

(*c*) to find out to what extent facilities for theoretical training are available in the technical institutes run by the various State Governments, and how far they can be utilized on the railways ;

(*d*) to make recommendations regarding improvements which should be effected in existing arrangements to impart both theoretical and practical training on a sounder footing.

The Committee had not reported by the close of the year.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Above: EXTERIOR VIEW OF NEW BARODA STATION--WESTERN RAILWAY

Below: VIEW OF NEW III CLASS WAITING HALL, INDORE—WESTERN RAILWAY

23 MAR 1954 • TANJORE •

CHAPTER X

AMENITIES FOR PASSENGERS

141. General.—Provision of amenities towards making rail travel more comfortable and safe continued to receive the close attention of Railway Administrations. These works are progressed with great care and adequate financial provision is made each year. They comprise provision of model carriages, fans and fittings, improvement of train lighting, opening of new stations and halts, provision of waiting rooms and halls, opening of new booking offices and out-agencies, electrification of stations, raising of platforms, catering arrangements and better sanitation of station premises and passenger carriages. During the year 6,442 fans were fitted in Third class and 1,249 in Inter class, coaches. Raising of platforms was carried out at about 75 stations during the year. Some of the important improvements on individual railways are enumerated below.

142. Improved lower class coaches.—Improved lower class coaches included in the number put into service during the year were 176 broad gauge and 43 metre gauge, third class all steel coaches. The 176 broad gauge comprised of 129 coaches constructed and furnished by the Hindustan Aircraft Ltd., Bangalore, 41 by the Calcutta Wagon Manufacturing Firms—the internal furnishing of which was done in the Eastern Railway Workshops—and 6 from Switzerland. In addition to these, 175 Third class coaches built in railway workshops to the approved 1939 standard design were placed in service.

143. Booking offices and out-agencies.—Additional booking facilities for the greater convenience of the travelling public were provided at different stations as indicated below.

Central Railway.—A joint city booking office of the Western and Central Railways, worked by the Western Railway, has been opened at Ujjain with effect from 1 August 1952 for booking of all classes of passenger traffic only, in local and through booking.

Northern Railway.—A new city booking agency was opened at Allahabad in Chowk area with effect from 10 January 1953 for the booking of Inter and Third class local and through passengers.

After examination of the financial implications, it has been decided to open the following city booking agencies and out-agencies as early as possible:

Out-agencies—

Tahsil Padampur *via* Shri Ganganagar
Siana Mandi *via* Garhmukteshwar

City booking agencies—

Karol Bagh (Delhi)
Aligarh
Kanpur
Lucknow

North Eastern Railway.—At four stations additional booking offices have been opened during the year and at twelve stations during *mela* only. A city booking office for sale of Inter and Third class tickets for passengers to stations on Fatehgarh District was opened with effect from 4 August 1952 at Kanpur, Mal Road. An out-agency at Dalingpara served *via* Hasimara Railway station was opened for passenger traffic from 1 January 1953. The booking offices remain open all the 24 hours for business at Badarpur, Banaras City, Barauni Junction, Bareilly City, Chaparmukh Junction, Chupra, Darbhanga, Gonda, Gorakhpur, Karimganj, Kasganj, Katihar, Lucknow Junction, Mahendrughat, Manipur Road, Muzaffarpur, Pandu, Pilibhit, Samastipur, Siliguri Junction and Sonepore stations.

Southern Railway.—During the year, two out-agencies at Irinjalakuda Town and Tirumalai Hill were opened. These are served respectively by the Irinjalakuda and Tirupathi East stations. A Town booking office was also opened at Erode from 1 April 1952 and a halt at Chigicherla between Zangalapalle and Dharmavaram stations was opened on 1 January 1953.

Western Railway.—A new upper class booking reservation and enquiry office was provided at Ahmedabad and improvements to the booking office on the Down platform at Ratlam and Miyagam and extension of the existing booking office for providing additional booking windows at Elphinstone Road was in progress. Ten electrically operated automatic self-printing and ticket-issuing machines were installed as a trial measure at five stations on the Bombay local suburban section. These machines which enable over 1,000 tickets to be issued in an hour were much appreciated by passengers, who could save much of the time spent in queues. The construction of a separate booking office for Third class passengers at Rajkot Junction was completed during the year.

New city booking offices were opened at Gandhinagar and Ujjain for booking of passenger traffic. The work in connection with the provision of a new upper class booking office, a new enquiry office and a new luggage office at Mehsana was in progress. Improvement and extension of booking offices were carried out at Kadi, Vijapur, Banas and Becharjee, and works at Khedbrahma, Talod, Hatundi Vishnagar and Dhandhuka were in progress.

144. Waiting rooms and waiting halls.—Besides improvements being made to the existing station accommodation new waiting rooms and waiting halls were constructed at a number of stations during the year.

Central Railway.—In order to provide improved waiting facilities for Inter class passengers, upper class waiting rooms at a number of stations were thrown open to them in the course of the year. Separate Inter class waiting rooms were also provided at Bombay V.T., Malkapur, Murtazapur, Nandura, Burhanpur, Harda, Itarsi, Dhamangaon and Chanda. Improvement of lighting and provision of ceiling fans in Third class waiting halls was carried out at Amraoti, Dadar, Nagpur and Jalgaon. Additions and alterations are in progress to the Third class waiting hall in Bina and the upper class waiting rooms in Mathura.

Eastern Railway.—Upper class waiting rooms for lady passengers at Bokaro station and upper class waiting rooms and waiting halls for passengers were provided at twenty nine stations during the year. Improvements were effected in the waiting rooms and waiting halls at sixty-three stations.

North-Eastern Railway.—Additional waiting rooms, waiting halls and passenger sheds were constructed at nineteen stations. Improved latrines and sanitary arrangements were installed at seventeen stations during the year at an approximate cost of Rs. 4 lakhs.

Southern Railway.—Electric lights were provided at six retiring rooms newly constructed at Bangalore City. Adequate number of ventilators were provided in the upper class waiting rooms and bath rooms at West Hill, Badagara, Pantalayini and Mahe stations. Improvements were effected to the upper class waiting rooms at Azhikkal, Tirur, Sankaridrug, Madhavnagar and Guntakal. The Third class waiting halls at Chewarra, Koratti Angadi and Alwaye stations were improved and extension at Targaon, Gubegud Road and Manjattidal was completed. New waiting halls for Third class passengers were provided at Adarki, Palshi, Bhavani Nagar, Nimbal and Ayandur and an additional waiting hall at Kurinjipadi. Waiting hall at Vishram Bag was concreted and overflowing tap was provided in the gentlemen's waiting room at Chingleput station. A passenger shelter was erected on the island platform at Palghat and erection at Nuzvid and Attili is in progress.

Western Railway.—During the year, the work of providing new waiting halls for Third class passengers at Baroda and Surat was completed. Public retiring rooms were also completed at Baroda and improvements to waiting rooms at Broach were sanctioned and taken in hand. The extension to the waiting hall at Ratlam was completed and the work of extension to the waiting hall at Ujjain was in progress. New waiting halls with modern facilities were provided at twenty-six stations and appreciable progress was made on the work of improvement to waiting halls at Bandikui and extension of waiting halls at Talod, Chittorgarh, Hatundi, Fatehnagar, Nathdwara and Kapasin. The waiting hall at Jamnagar was extended and a *mela* shed for Third class passengers with modern facilities for *mela* traffic was provided at Junagadh. The work of improvements to waiting rooms and bath rooms at Vishwamitri was taken in hand. A new passenger waiting shed was provided at Gandhidham. Upper class waiting rooms at Bilimora and Ujjain were proposed in connection with remodelling of the station buildings at these stations; the work was almost completed at Bilimora and the work was in progress at Ujjain. Provision of modern furniture and improvements to waiting rooms, etc., were sanctioned at ten stations. A new upper class waiting room for ladies was provided at Dwarka. Masonic tile floors and dado were provided in upper class waiting rooms at Gondal and Jetalser.

145. Additional platforms and sheds.—The improvements to, or extension of, existing platforms, and provision of covering over the platforms, were continued with satisfactory progress during the year.

Central Railway.—Extension and concreting of passenger platforms at Amraoti, Dadar, Jalgaon, Mathura, Aurangabad and thirty-six other minor stations were carried out. Covering was provided over passenger platforms at Aurangabad, Jamai-Osmania, Khairatabad and Kazipet and the construction of passenger sheds was also completed at Agra Cantonment, Bilaganj, Bharwasumerpur, Dabra, Datia, Dholpur, Faridabad, Hodal Kalpi, Kosi-Kalan, Okhla, Orai, Palwal, Sanchi, Sonagir and Sanichara.

Eastern Railway.—Cement concrete surfacing of platforms at Bongaon and Ranaghat was carried out and the existing platforms at Dumurdoha, Gahmar, Gushkara, and Moghalsarai stations was extended. Platform shed cover was provided at forty-seven stations.

Northern Railway.—The platforms at Delhi Main and Dhuri was surfaced with cement concrete, etc., and sheds over platforms were provided at Hamilton Road, (Delhi) Panipat and Jodhpur. Extension of platform at Saharanpur and raising of platforms at Muradnagar and Sirhind had been completed. The existing platform at Batala had been provided with shelter.

Southern Railway.—The work of raising, lengthening, paving and concreting at thirty-four stations has been carried out and passenger shelters have also been provided at fifty-two stations.

Western Railway, broad gauge.—The extension to passenger platforms at Bombay Central, Borivli, Virar, Palghar, Dahanu Road, Vapi and certain other stations and raising of the extended portion of the platform at Nadiad and Anand was in progress. Covering over platforms was provided at Bilimora, Surat, Kosamba, Baroda and Ratlam, and the work of extending the covering over platforms at Santa Cruz and Ujjain was in progress. The platforms at Nandurbar, Ujjain, Bardoli and Miyagam were raised.

Metre gauge.—Covering over the platforms at Indore and Mehsana was nearing completion. The work of raising, extending and surfacing of platforms at thirty-three other stations had been completed while appreciable progress was made at seventeen other stations.

The work of raising passenger platforms at four stations and reconstruction of passenger platform at Khambhalia and extension of passenger platform at Porbandar was completed during the year.

146. Electrification of stations.—The work on the provision of electric lighting of passenger platforms, station buildings, waiting sheds, approach roads, circulating areas, recorded satisfactory progress during the year. In all, ninety-four stations were electrified during the year on Indian Government Railways as detailed below:

Railway	*No. of stations*
Central	12
Eastern	14
Northern	6
North-Eastern	10
Southern	40
Western	12*

Wiring of three more stations on the Southern Railway has been completed, and the installation will be brought on use as soon as electric supply connection is given by Government Electricity Department.

Improvement of lighting arrangements and provision of ceiling fans in Third class waiting halls, etc., was carried out at various stations on the Railways.

Water coolers have also been installed at thirty-three stations of the Central, Eastern, Northern, North-Eastern and Southern Railways. Besides these, arrangements for supply of refrigerated drinking water to passengers have also been made on five stations of the North-Eastern Railway.

147. Catering arrangements.—Besides giving attention to the cleanliness and the quality of catering, steps were taken to improve the existing standard of facilities to the travelling public. A new type of buffet-cum-restaurant car was designed providing separate dining room accommodation for upper and lower class passengers, and railway administrations were asked to go ahead with the construction of new dining cars on this improved pattern.

Furthermore, restrictions on the sale of baker's bread in the railway catering establishments were removed this year in response to public opinion and the facility of service of Indian meals in *thalis* from the dining cars, normally catering to upper class passengers only, was extended to Inter and Third class passengers in their compartments.

148. Supply of drinking water.—Special attention continued to be given to the provision of adequate drinking water to passengers. The arrangement of stationing an adequate number of watermen (about twenty in number) at each of the important stations during the hot weather was repeated. At important stations the strength of watermen was further increased to ensure that every passenger carrying train is attended to by at least three watermen,—one in the rear, one in front and one in the middle portion of the train.

A scheme of travelling watermen on trains which was in existence on the Delhi, Ferozepore and Lucknow Divisions of the Northern Railway was extended to the Bikaner, Jodhpur and Moradabad Divisions of that Railway, and was also introduced on the Lumding-Badarpur and Rangiya-Rangapara North sections of the North-Eastern Railway. Travelling watermen were accommodated in the Ice Vendors' or in a part of a small Third class compartment of trains and served drinking water to passengers at all stations of halt. This additional amenity was appreciated by the travelling public.

The number of stations where electrically cooled water was supplied during the year rose to 83.

* These include installation at Gandhidham and Radhanpur stations.

149. Steps to alleviate overcrowding in trains.—During 1952-3 the following additional number of coaching stock and locomotives were placed on the line:

	Broad gauge	Metre gauge	Narrow gauge
Coaching stock	585	310	—
Locomotives	54	136	18

142 new trains were introduced and 117 existing trains were extended, thereby increasing the total passenger train mileage on Indian Railways in the year 1952-3 to 106,529,000 as against 104,632,000 in the previous year.

In this connection it may be mentioned that apart from the measures taken by railways, overcrowding on the railways showed a downward tendency due to the overall decline in passenger traffic, as indicated by the following statistics:

	1950-1	1951-2	**1952-3**
Number of passengers carried (millions)	1307·8	1232·1	**1184·4**

150. Actual expenditure under the detailed heads on passenger amenities.—The statement below gives the actual expenditure during 1952-3 on passenger amenity works:

STATEMENT OF EXPENDITURE ON PASSENGER AMENITIES FROM DEVELOPMENT FUND FOR THE YEAR 1952-3

(In thousands of rupees)

	Central	Eastern	Northern	North-Eastern	Southern	Western	Total
Water supply at stations	5,46	4,32	2,14	3,57	97	1,24	17,70
Waiting rooms and festival sheds.	70	6,65	6,43	3,46	2,50	3,16	22,90
Refreshment rooms, retiring rooms and vendors stall of all description.	2,20	1,30	78	2,13	3,21	68	10,30
Provision and improvement of latrines.	28	37	1,40	97	51	1,82	5,35
Extending, raising, widening, surfacing, covering and other improvements including provision of seats plantation, etc. at platforms.	10,57	20,40	14,41	8,89	7,26	11,35	72,88
Provision of new overbridges and sub-ways and extension.	70	1,99	2,49	40	72	87	7,17
Provision of bathing facilities at stations.	17	34	12	42	6	4	1,15
Improved stations approaches including improved lighting.	40	93	1,86	2,74	2,93	78	9,64
Improvement to existing carriages such as fans.	6,82	16,14	3,69	3,42	3,97	5,26	39,30
Improved lighting and provision of fans for station platforms, waiting halls, festival sheds and vendor's stalls.	4,04	4,31	1,25	74	3,63	2,62	16,59
Works coming under all these heads provided in connection with *melas*.	—	15	—	1	1	31	48
Any other works considered essential.	92	1,88	1,58	4,59	11,64	9,93	30,54
Total	32,26	58,78	36,15	31,34	37,41	38,06	2,34,00(A)

(A) Excludes credit of rupees ten thousand booked under Development Fund I (Passenger amenities) in write back of the erroneous debit for the last year.

CHAPTER XI

ACCIDENTS

151. Major Accidents.—The details of major accidents which occurred during the year are given below:

On 18 May 1952, while 221 Up Goods was running from Bikaner to Palana station on the Bikaner-Merta Road section of the Northern Railway, 24 Down Mixed train, running in the opposite direction from Palana to Bikaner, collided head-on with the Goods train. The engine of both the trains, the first four coaches of the Mixed train and two wagons next to engine of the Goods train suffered damages. Forty-five persons were killed and 67 injured. The approximate cost of damage to the engines, rolling-stock and permanent way was Rs. 1,09,000. The accident was caused by the two trains having been allowed to enter the same block section between Palana and Bikaner without permission to approach having been received from the station in advance, in each case.

On 28 September 1952, while 71 Up Allahabad Express was running between Kidihdapur and Indara Junction stations on the Benaras-Bhatni section of the North-Eastern Railway, its engine and five coaches next to it derailed and suffered damages. Three persons were killed and 22 injured. The approximate cost of damage to the engine, rolling-stock and permanent way was Rs. 84,100. The derailment was caused by the track having been tampered with by some person or persons unknown.

On 26 February 1953, while 73 Up Passenger was running from Gaya to Kastha station on the Grand Chord section of the Eastern Railway there was a sudden out-break of fire in the third coach from the engine and the coach was completely destroyed down to floor level. Five persons were killed and 16 injured. The approximate cost of damage to rolling stock was Rs. 40,000. The fire was caused by a package containing a petrol tin, unauthorisedly carried by some passenger in the compartment, catching fire from a lighted match, carelessly thrown inside the compartment by another smoking passenger.

152. Review of accident statistics.—The following statement analyses, under certain principal heads, the accidents which occurred during the last two years. A statement showing the character and extent of accidents in greater detail for each railway will be found in Appendix D of Volume II of this Report.

There has been a reassuring decline in the number of accidents on open line of Indian Railways during the year 1952-3 as compared with the previous year, viz., from 16,498 to 13,146 or a decrease of 20 per cent. The increase in the total train miles, was however, of the order of 2 per cent. Thus despite an increase in train mileage the incidence of accidents has been lower.

ACCIDENTS DURING 1951-2 AND 1952-3 CLASSIFIED UNDER PRINCIPAL HEADS

	1951-2	**1952-3**
(1) Running over cattle	5,344	**4,150**
(2) Accidents due to failure of engines, owing to faulty material, workmanship and operation arising from the working of the running staff	2,697	**1,907**
(3) Accidents due to failure of coupling and draft gear	2,308	**1,832**
(4) Accidents due to failure of engines owing to faulty design, material and workmanship in the Mechanical Department	1,487	**1,544**
(5) Derailments not involving passenger trains	1,504	**1,223**
(6) Accidents due to other rolling stock failures	929	**695**
(7) Fires in trains, at stations and bridges	437	**334**

ACCIDENTS DURING 1951-2 AND 1952-3 CLASSIFIED UNDER PRINCIPAL HEADS—*contd.*

	1951-2	1952-3
(8) Derailment of passenger trains	248	**226**
(9) Flooding of permanent way	34	**125**
(10) Trains running into road traffic at level crossings	127	**110**
(11) Attempted train wrecking	139	**104**
(12) Running over obstructions (other than those included under 'train wrecking', 'attempted train wrecking' and 'trains running into road traffic at level crossings')	108	**104**
(13) Collisions involving goods trains or goods vehicles	99	**73**
(14) Broken rails	162	**71**
(15) Accidents due to failure of axles	178	**66**
(16) Collisions involving passenger trains	33	**36**
(17) Passenger trains running in the wrong direction through points but not derailed	38	**18**
(18) Landslips	21	**14**
(19) Collisions between light engines	25	**9**
(20) Accidents due to failure of brake apparatus	18	**6**
(21) Train wrecking	12	**5**
(22) Failure of bridges, tunnels, etc.	5	**3**
(23) Accidents due to failure of tyres and wheels	26	...
(24) Miscellaneous	519	**491**
TOTAL	16,498	**13,146**

Running over cattle still accounts for the largest number of accidents: the percentages of the accidents by categories to total are given below in the descending order of their number:

	Per cent
Running over cattle	32
Accidents due to failure of engines owing to faulty material workmanship and operation arising from the working of the running staff	15
Accidents due to failure of couplings and draft gear	14
Accidents due to failure of engines owing to faulty design, material and workmanship in the Mechanical Department	12
Derailments not involving passenger trains	9
Accidents due to other rolling-stock failures	5
Fires in trains at stations and bridges	3
Derailments of passenger trains	1·7

Accidents in railway workshops accounted for the death of eight, and injuries to 20,477 railway servants or an increase of 2 in the former and 2,517 in the latter as compared with the previous year.

The number of passengers, railway servants and other persons killed and injured in accidents on Indian Railways exclusive of casualties in Railway

Workshops during 1952-3 as compared with the previous year may be seen from the table below:

NUMBER OF PERSONS INJURED IN ACCIDENTS ON ALL RAILWAYS DURING 1951-2 AND 1952-3

Classification	Killed		Injured	
	1951-2	**1952-3**	1951-2	**1952-3**
A.—Passengers—				
(a) In accidents to trains, rolling-stock, permanent way, etc.	38	**57**	303	**361**
(b) In accidents caused by movement of trains and railway vehicles exclusive of train accidents	403	**319**	3,286	**2,999**
(c) In accidents on railway premises in which the movement of trains, vehicles, etc., was not concerned	..	**2**	35	**100**
Total	441	**378**	3,624	**3,460**
B.—Railway servants—				
(a) In accidents to trains, rolling-stock, permanent way, etc.	12	**16**	151	**165**
(b) In accidents caused by the movement of trains and railway vehicles exclusive of train accidents	145	**186**	5,413	**5,679**
(c) In accidents on railway premises in which the movement of trains, vehicles, etc., was not concerned	28	**24**	18,340	**18,343**
Total	185	**226**	23,904	**24,187**
C.—Other than passengers and railway servants—				
(a) In accidents to trains, rolling-stock, permanent way, etc.	76	**18**	125	**89**
(b) In accidents caused by movement of trains and railway vehicles exclusive of train accidents	3,501	**4,092**	1,927	**1,997**
(c) In accident on railway premises in which movement of trains, vehicles, etc., was not concerned	11	**43**	70	**56**
Total	3,588	**4,153**	2,122	**2,142**
GRAND TOTAL	4,214	**4,757**	29,650	**29,789**

Of the total of 4,757 persons killed, 4,153 or 87 per cent were other than passengers and railway servants and, of this number, 3,519 were trespassers and 361 were suicides. Altogether 69 persons were killed on railway premises otherwise than during the movement of trains, vehicles, etc.

As compared with the previous year the number of passengers and railway servants killed and injured in accidents to trains, rolling-stock and permanent way, etc., increased by 23 and 72 respectively owing to heavy casualties in the three major accidents described in the preceding paragraph of this report.

The increase, as compared with the previous year, in the casualty figures under certain other items and the reasons therefor are indicated below:-

(i) In accidents caused by the movement of trains and railway vehicles exclusive of train accidents.

(a) The number of railway servants killed increased by 41 in accidents which occurred while working on the permanent way, sidings, etc., and attending to gates of level crossings. The number injured increased by 266 in accidents whilst coupling and uncoupling of vehicles, braking, spragging or choking wheels and due to other miscellaneous causes.

(b) The number of persons other than passengers and railway servants killed and injured increased by 591 and 70 respectively due to increases in the numbers of trespassers killed and injured and of suicides.

(ii) In accidents on railway premises not connected with the movement of trains and railway vehicles, etc:

(*a*) The number of passengers injured increased by 65 in accidents which occurred when opening and closing doors of railway vehicles and to miscellaneous causes.

(*b*) The number of persons other than passengers and railway servants killed increased by 32 due mainly to miscellaneous causes.

The figures under other items show decreases or negligible increases.

The following statement shows the number of passengers killed and injured in train accidents only, *i.e.*, collisions, derailments, etc., during the last five years as compared with the number carried:

NUMBER OF PASSENGERS KILLED AND INJURED IN TRAIN ACCIDENTS ON ALL RAILWAYS FROM 1948-9 TO 1952-3

Year	No. of passengers carried (in millions)	Killed		Injured	
		Number†	Per million passengers carried	Number†	Per million passengers carried
1948-9	1,185	55	0·05	260	0·22
1949-50	1,255	111	0·09	365	0·29
1950-1	1,308	21	0·02	284	0·22
1951-2	1,232	38	0·03	290‡	0·24
1952-3	**1,184**	**54**	**0·05**	**339**	**0.29**

† Excludes train-wrecking and attempted train-wrecking. ‡ Revised figures.

On the Government Railways, the main causes for the accidents to Railway servants caused by the movement of trains and railway vehicles exclusive of train accidents, are analysed in the following table:

CLASSIFICATION OF ACCIDENTS TO RAILWAY SERVANTS ON GOVERNMENT RAILWAYS

Cause	Killed		Injuries	
	1951-2	**1952-3**	1951-2	**1952-3**
(1) Misadventure or accidental	118	**165**	4,975	**5,281**
(2) Want of caution or misconduct on the part of the injured person	26	**20**	385	**339**
(3) Want of caution or breach of rules, etc., on the part of railway servants other than the persons injured	1	**1**	27	**46**
(4) Defective apparatus, appliance, etc., or want of sufficient appliances, safeguards, etc.	..	..	1	**2**
TOTAL	145	**186**	5,388	**5,668**

153. Appointment of Claims Commissioners.—During the year under review only one Claims Commissioner was appointed in respect of the following major accident:

Collision between 24 Down passenger and a Goods train between Palana and Bikaner Railway Stations on the Northern Railway on 18 May 1952.

The Claims Commissioner disposed of 83 claims decreeing Rs. 1,71,815. In addition, the other Claims Commissioners appointed during the previous years continued to dispose of pending cases.

APPENDIX A

Resolution regarding the separation of Railway from General Finances, adopted by the Legislative Assembly on 20 September 1924 and Convention Resolutions of 1943 and 1949.

"This Assembly recommends to the Governor General in Council that in order to relieve the general budget from the violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry out a continuous railway policy based on the necessity of making a definite return to general revenues on the money expended by the State on Railways,

(1) The railway finances shall be separated from the general finances of the country and the general revenues shall receive a definite annual contribution from railways which shall be the first charge on the net receipts of railways.

(2) The contribution shall be based on the capital at charge and working results of commercial lines, and shall be a sum equal to one per cent on the capital at charge of commercial lines (excluding capital contributed by companies and Indian States) at the end of the penultimate financial year *plus* one-fifth of any surplus profits remaining after payment of this fixed return, subject to the condition that, if in any year railway revenues are insufficient to provide the percentage of one per cent on the capital at charge surplus profits in the next or subsequent years will not be deemed to have accrued for purposes of division until such deficiency has been made good.

The interest on the capital at charge of, and the loss in working, strategic lines shall be borne by general revenues and shall consequently be deducted from the contribution so calculated in order to arrive at the net amount payable from railway to general revenues each year.

(3) Any surplus remaining after this payment to general revenues shall be transferred to a railway reserve; provided that if the amount available for transfer to the railway reserve exceeds in any year three crores of rupees only two-thirds of the excess over three crores shall be transferred to the railway reserve and the remaining one-third shall accrue to general revenues.

(4) The railway reserve shall be used to secure the payment of the annual contribution to general revenues; to provide, if necessary, for arrears of depreciation and for writing down and writing off capital; and to strengthen the financial position of railways in order that the services rendered to the public may be improved and rates may be reduced.

(5) The railway administration shall be entitled, subject to such conditions as may be prescribed by the Government of India, to borrow temporarily from the capital or from the reserves for the purpose of meeting expenditure for which there is no provision or insufficient provision in the revenue budget subject to the obligation to make repayment of such borrowings out of the revenue budgets of subsequent years.

(6) A Standing Finance Committee for Railways shall be constituted consisting of one nominated official member of the Legislative Assembly who should be chairman and eleven members elected by the Legislative Committee for Railways shall be *ex-officio* members of the Central Advisory Council, which shall consist, in addition, of not more than one further nominated official member, six non-official members selected from a panel of eight elected by the Council of State from their body and six non-official members selected from a panel of eight elected by the Legislative Assembly from their body.

The Railway Department shall place the estimate of railway expenditure before the Standing Finance Committee for Railways on some date prior to the date for the discussion of the demand for grants for railways and shall, as far as possible, instead of the expenditure programme revenue show the expenditure under a depreciation fund created as per the new rules for charge to capital and revenue.

(7) The railway budget shall be presented to the Legislative Assembly if possible in advance of the general budget and separate days shall be allotted for its discussion, and the Member in charge of Railways shall

then make a general statement on railway accounts and working. The expenditure proposed in the railway budget, including expenditure from the depreciation fund and the railway reserve, shall be placed before the Legislative Assembly in the form of demands for grants. The form the budget shall take after separation, the detail it should give and the number of demands for grants into which the total vote shall be divided shall be considered by the Railway Board in consultation with the proposed Standing Finance Committee for Railways with a view to the introduction of improvements in time for the next budget, if possible.

(8) These arrangements shall be subjected to periodic revision but shall be provisionally tried for at least three years.

(9) In view of the fact that the Assembly adheres to the resolution passed in February 1923, in favour of State management of Indian Railways, these arrangements shall hold good only so long as the East Indian Railway and the Great Indian Peninsula Railway and existing State-managed railways remain under State management. But if in spite of the Assembly's resolution above referred to Government should enter on any negotiations for the transfer of any of the above railways to Company management such negotiations shall not be concluded until facilities have been given for a discussion of the whole matter in the Assembly. If any contract for the transfer of any of the above railway to company management is concluded against the advice of the Assembly, the Assembly will be at liberty to terminate the arrangements in this Resolution.

Apart from the above convention this Assembly further recommends—

(i) that the railway services should be rapidly Indianised, and further that Indians should be appointed as Members of the Railway Board as early as possible, and

(ii) that the purchases of stores for the State Railways should be undertaken through the organization of the Stores Purchase Department of the Government of India."

Convention Resolution of 1943

The Legislative Assembly on 2 March 1943 passed the following resolution:—

"Whereas it has been found that the Convention, which was adopted under the Assembly Resolution, dated 20 September 1924, and which was intended to relieve the General Budget from violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry on a continuous railway policy based on the necessity of making a definite return to general revenues on the money expended by the State, has not achieved these objects, this Assembly recommends to the Governor General in Council that:

(i) for the year 1942-3, a sum of Rs. 2,35,32 thousand shall be paid to general revenue over and above the current and arrear contribution due under the Convention,

(ii) from 1 April 1943, so much of the Convention as provides for the contribution and allocation of surpluses to general revenues shall cease to be in force,

(iii) for the year 1943-4, the surpluses on commercial lines shall be utilised to repay any outstanding loan from the depreciation fund and thereafter be divided 25 per cent to the railway reserve and 75 per cent to general revenues, the loss, if any, on strategic lines being recovered from General Revenues, and

(iv) for subsequent years and until a new convention is adopted by the Assembly, the allocation of the surplus on commercial lines between the railway reserve and general revenues shall be decided each year on consideration of the needs of the railways and general revenues, the loss, if any, on strategic lines being recovered from general revenues."

Convention Resolution of 1949

The Constituent Assembly of India (Legislative) on 21 December 1949 passed the following resolution:—

"This Assembly, after considering the recommendations of the Committee appointed by it in April 1949 to review the Convention relating to the separa-

tion of railway from general finance which was adopted under the Assembly Resolution, dated 20 September 1924, and in supersession of that and all other previous resolutions on the subject, resolve:—

(1) that railway finance shall continue to remain separated from general finance;

(2) that the general tax-payer shall have the status of the sole shareholder in the railway undertaking;

(3) that on the capital invested out of general revenues in the railway undertaking as computed annually, general revenues shall receive only a fixed annual dividend;

(4) that for a period of five years, commencing from 1950-1, the annual dividend, shall be a sum calculated at the rate of 4 per cent on the capital invested provided that no dividend shall be payable on the capital invested out of general revenues in unremunerative strategic lines;

(5) that a Committee of the House shall review the rate of dividend towards the end of the aforesaid period and suggest for the years following it any adjustment considered necessary, having regard to the revenue returns of the railway undertaking, the average borrowing rate of government and any other relevant factors;

(6) that the existing railway reserve shall be renamed the Revenue Reserve Fund and utilised primarily for maintaining the agreed payments to general revenues and for making up any deficit in the working of the railways;

(7) that a Development Fund shall be constituted for financing expenditure for the following purposes:—

(*a*) passenger amenities,

(*b*) labour welfare, and

(*c*) railway projects which are necessary, but unremunerative;

(8) that for meeting the cost of replacement and renewal of assets, the Depreciation Reserve Fund shall receive, for the next five years, a minimum contribution of Rs. 15 crores per annum chargeable to the working expenses of the undertaking;

(9) that the railway surplus shall be available for distribution amongst the Revenue Reserve Fund, the Development Fund, and the Depreciation Reserve Fund to the extent the last-named needs strengthening over and above the minimum annual contribution;

(10) that a Standing Finance Committee for Railways and a Central Advisory Council for Railways shall be constituted in the manner laid down in the motion adopted by this House on 23 March 1949;

(11) that the annual estimates of railway expenditure shall be placed before the Standing Finance Committee for Railways on some date prior to the date for the discussion of the demands for grants for railways by the Assembly; and

(12) that the Railway Budget shall be presented to the House, if possible, in advance of the general budget and separate days shall be allotted for its discussion and the Minister for Railways shall then make a general statement on railway accounts and working. The expenditure proposed in the Railway Budget, including the appropriation to the Depreciation Reserve Fund, the Development Fund, and the Revenue Reserve Fund shall be placed before the House in the form of demands for grants. The form the budget shall take, the details it shall give, and the number of grants into which the total vote shall be divided, shall be drawn up by the Ministry of Railways in consultation with the Standing Finance Committee for Railways.

2. This Resolution shall come into force from 1 April 1950."

APPENDIX B

MINISTRY OF RAILWAYS

Officers of the Ministry of Railways (Railway Board) and attached offices on 31 March 1953

Shri Lal Bahadur Shastri, Minister for Transport and Railways

Shri O. V. Alagesan, Deputy Minister for Transport and Railways

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Railway Board

Shri F. C. Badhwar	Chairman and Member Engineering
„ P. C. Bhattacharyya	Financial Commissioner for Railways
„ V. Nilakantan	Member (Staff)
„ S. S. Vasist	Member (Transportation)
„ H. K. L. Sethi	Director, Civil Engineering
„ P. N. Saxena	Director, Establishment
„ N. C. Deb	Director, Finance (Expenditure)
„ K. Sadagopan	Director, Finance (Special Duty)
„ P. Morris	Director, Mechanical Engineering
„ B. C. Mallik	Director, Rail Movements (Calcutta)
„ A. K. Basu	Director, Traffic (General)
„ Ranjit Singh	Director, Traffic (Transportation)
„ L. A. Natesan	Economic Adviser
„ R. E. De Sa	Joint Director, Civil Engineering
„ V. T. Narayanan	Joint Director, Establishment
„ K. V. Kasturi Rangan	Joint Director, Finance (Budget)
„ D. Sandilya	Joint Director, Finance (Expenditure)
„ P. C. Kapur	Joint Director, Mechanical Engineering
„ S. K. Guha	Joint Director, Traffic (General)
„ P. H. Sarma	Joint Director, Traffic (Transportation)
„ Haveli Ram	Secretary
„ R. Srinivasan	Deputy Director, Establishment I
„ S. L. Jaini	Deputy Director, Establishment II
„ V. V. Bhide	Deputy Director, Exhibition
„ M. L. Mukherjee	Deputy Director, Finance (Expenditure) I
„ Y. Krishan	Deputy Director, Finance (Expenditure) II
„ B. R. Nanda	Deputy Director, Preferential Traffic
„ Jagjit Singh	Deputy Director, Rail Movements (Moghal Sarai)
„ J. L. Dutta Gupta	Deputy Director, Rail Movements (Calcutta)
„ G. Rama Rau	Deputy Director, Statistics (on leave)
„ V. R. Ganeshan	Deputy Director, Statistics
„ S. R. Woodmore	Deputy Director, Stores Reorganization
„ I. C. Bhatt	Deputy Director, Tele. Communication
„ Rajendra Dev	Deputy Director, Traffic (Transportation)
„ Parshotam Lal	Assistant Secretary
„ P. M. Narasimhan	Assistant Director, Establishmet I
„ P. S. Doraisamy	Assistant Director, Establishment II
„ D. C. Rewari	Assistant Director, Finance (Budget)
„ A. Hildreth	Assistant Director, Stores Reorganization
„ Surjan Singh	Assistant Director, Traffic (Commercial) (on leave)

Shri V. Sriraman	Assistant Director, Traffic (Commercial)
,, B. S. Misra	Hindi Officer
,, A. Mascarenhas	Special Assistant to Chairman, Railway Board

Attached Officers

Shri G. Sen	Officer on Special Duty (Forms Standardization) (Calcutta)
,, P. Sahai	Officer on Special Duty (Transportation Power)
,, K. L. Ghei	Officer on Special Duty (Stores Reorganization)
,, J. K. Verma	Officer on Special Duty (Co-operatives)
,, N. K. Roy	Officer on Special Duty (Ganga Bridge) I
,, S. S. Verma	Officer on Special Duty (Ganga Bridge) II
,, Walter Frey	Officer on Special Duty (Ganga Bridge) III

Superintendents

Shri Ram Singh	Budget Branch
,, Rup Lal	Establishment I Branch
,, N. Rajagopalan	Establishment II Branch (on leave)
,, K. N. R. Pillai	Establishment II Branch (Officiating)
,, S. Sivaraman	Establishment IV Branch
,, P. B. Jain	Establishment III Branch
,, Tara Chand	Establishment Special Branch (on leave)
,, G. R. Venkataraman	Establishment Special Branch (Officiating)
,, R. R. Hariharan	Finance (Establishment) Branch
,, Kunwar Bahadur	Finance (Expenditure) Branch
,, Gurmukh Singh	Finance (Special) Branch
,, Acharaj Ram	General Branch
,, A. C. Ahuja	Mechanical Engineering Branch
,, S. K. Srivastava	Preferential Traffic Branch
,, R. R. Bhanot	Statistics Branch
,, R. N. Datta	Stores Reorganization Branch
,, A. N. Kapur	Traffic Commercial Branch
,, A. N. Sheopory	Traffic Transportation Branch
,, M. P. Haran	Works Branch
,, N. L. Das Gupta	On leave preparatory to retirement

Attached Offices

I. Central Standards Office for Railways

Shri B. S. Sindhu	Deputy Chief Controller of Standardization-in-Charge
,, R. H. G. da Cunha da Costa	Deputy Chief Controller of Standardization (Designs)
,, V. Venkataramayya	Deputy Chief Controller of Standardization (Civil)
,, N. B. Shroff	Architect
,, L. C. Mohindra	Assistant Chief Controller of Standardization (Civil) I
,, M. Menezes	Assistant Chief Controller of Standardization (Civil) II
,, R. Krishnamurti	Assistant Chief Controller of Standardization (Loco)
,, R. K. Sethi	Inspecting Officer (Locos and Boilers)
,, B. L. Bailur	Assistant Chief Controller of Standardization (Coach Building)
,, Salig Ram	Inspecting Officer for Railways, Tatanagar
,, K. S. Krishnan	Sectional Officer, LDO
,, A. V. Srinivasan	Sectional Officer, LDO
,, J. S. Bhavra	Sectional Officer, CDO

II. Research Organization

(a) Research and Testing Centre, Lucknow

Shri S. L. Kumar	Director, Research
„ R. Basu Chowdhury	Deputy Director (Civil)
„ M. S. Murti	Deputy Director (Electrical)
„ M. V. Kamlani	Deputy Director (Mechanical)
„ M. N. Bery	Deputy Director (Civil)
„ B. V. Mallya	Dynamometer Car Officer
„ C. S. P. Sastry	Oscillograph Car Officer
„ M. B. Ramchandani	Research Officer (Electrical)

(b) Research and Testing Sub-Centre, Lonavla

Shri A. V. D. Costa	Joint Director
„ U. G. K. Rao	Deputy Director

(c) Research and Testing Sub-Centre, Chittaranjan

Shri R. G. Bhatawadekar	Research Officer (M & C) Senior Scale
„ S. Ramanujam	Research Officer (M & C) Class II

Officers serving on Committees

I. Standards Advisory Committee

Shri S. L. Saksena	Chairman
„ L. C. Mohindra	Member
„ P. B. Aibara	Member
„ N. Padmanabhan	Member

II. Committee to investigate the possibilities of running passenger train services over the Port Commissioners' Railway in Calcutta

Shri Satyendra Nath Roy	Chairman (non-official)
„ Shahnawaz Khan, M.P.	Member (non-official)
„ N. C. Ghosh, West Bengal Government	Member
„ R. Gupta, Calcutta Port Commissioner	Member
„ B. K. Sen, Calcutta Municipal Corporation	Member
„ K. B. Mathur	Member
„ B. C. Mallik	Member

III. Committee to enquire into the abnormally difficult travel conditions and inadequate amenities for passengers on the *ex*-Assam Railway

Shri A. R. Rao	Convener
„ T. Bell	Member
„ D. J. Batliwalla	Member
„ S. N. Barua	Member/Secretary

IV. Committee to enquire into the unexpectedly high rate of corrosion in the panels of H. A. L. Passenger Coaches

Shri B. S. Sindhu	Chairman
„ S. Chakravarty	Member
„ S. Ramanujam	Member/Secretary

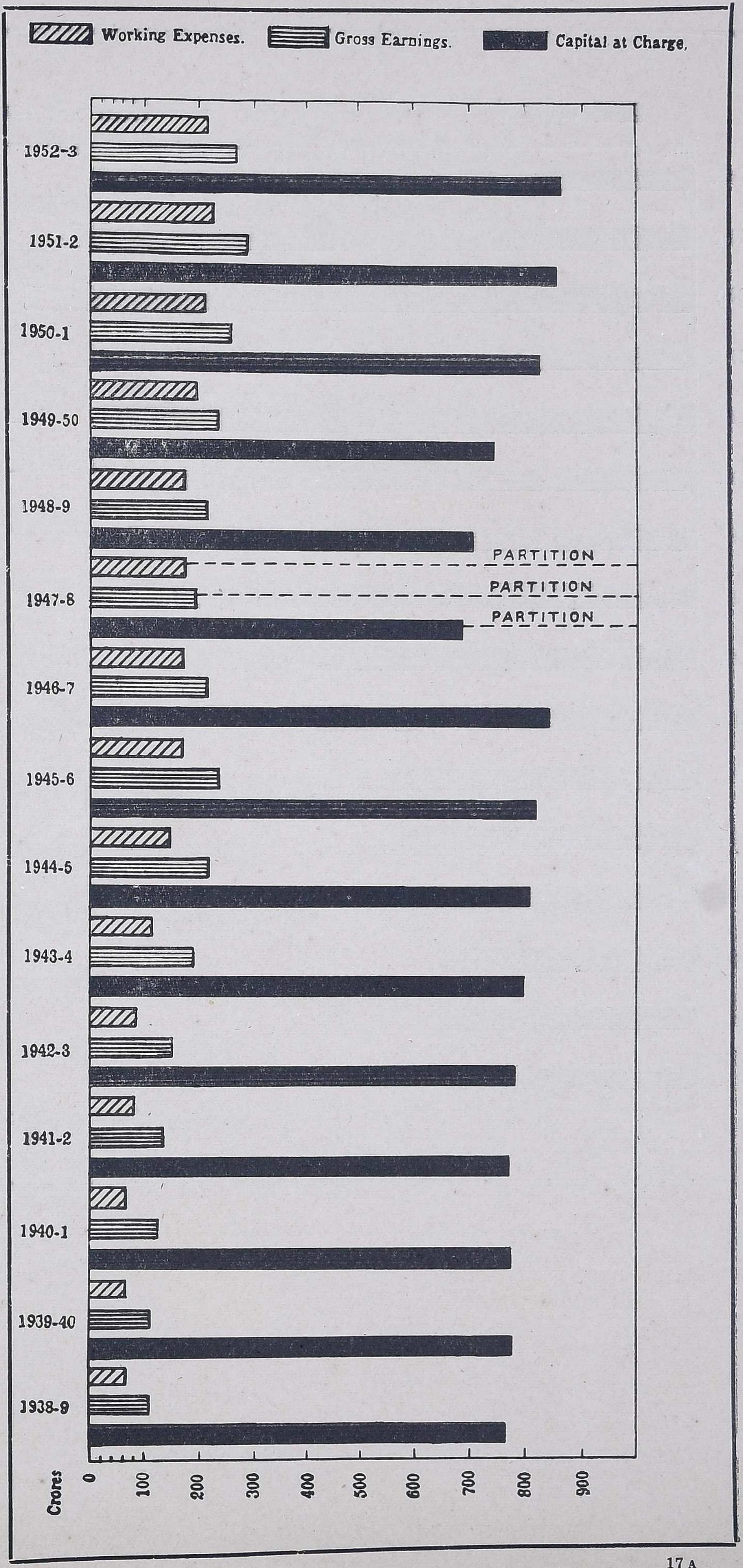
V. Committee to investigate into a number of typical cases where open tenders were not called for on the Assam Rail Link Project

Shri P. C. Khanna	Member (non-official)
„ M. Kamath	Member

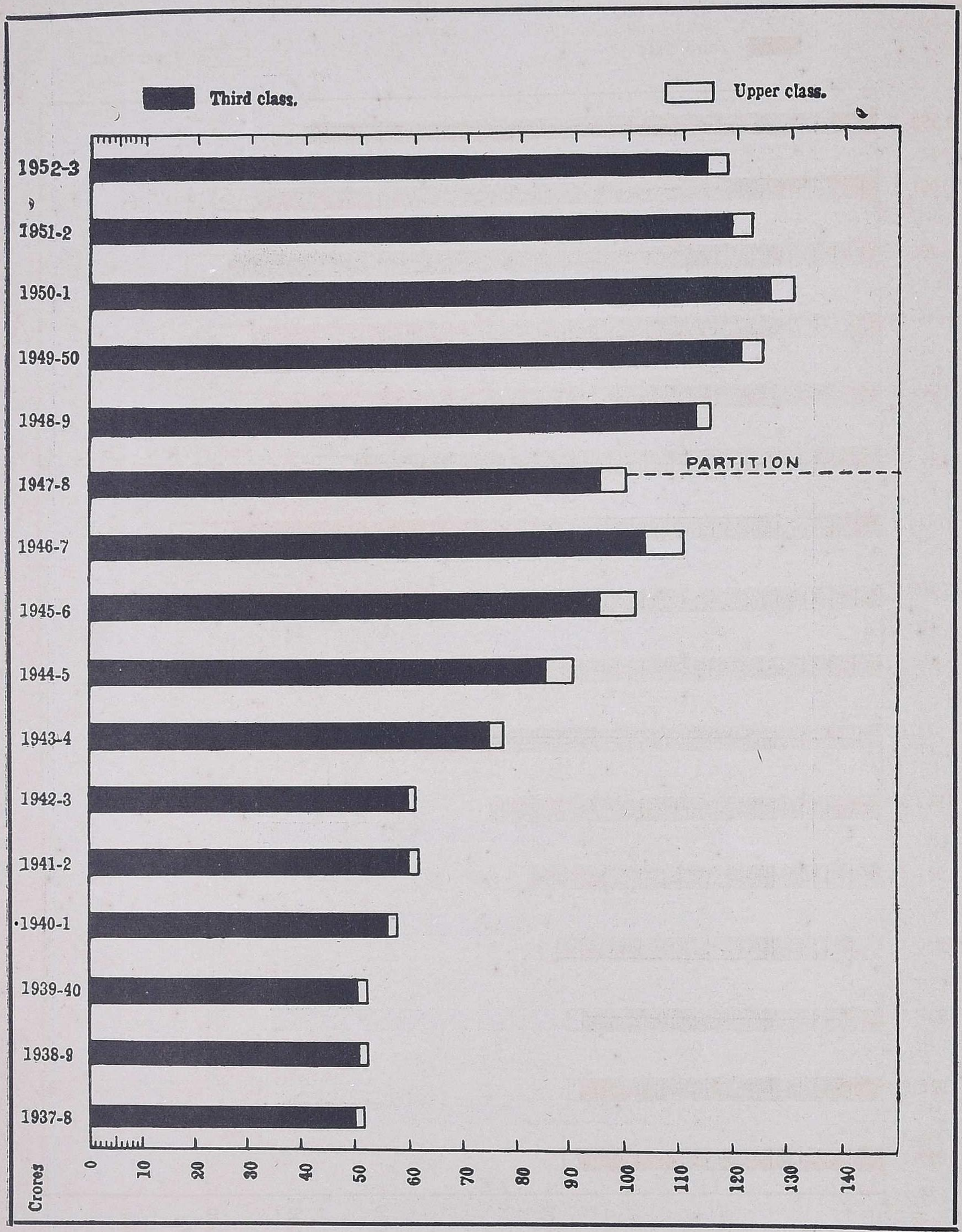
APPENDIX C.

GRAPHS

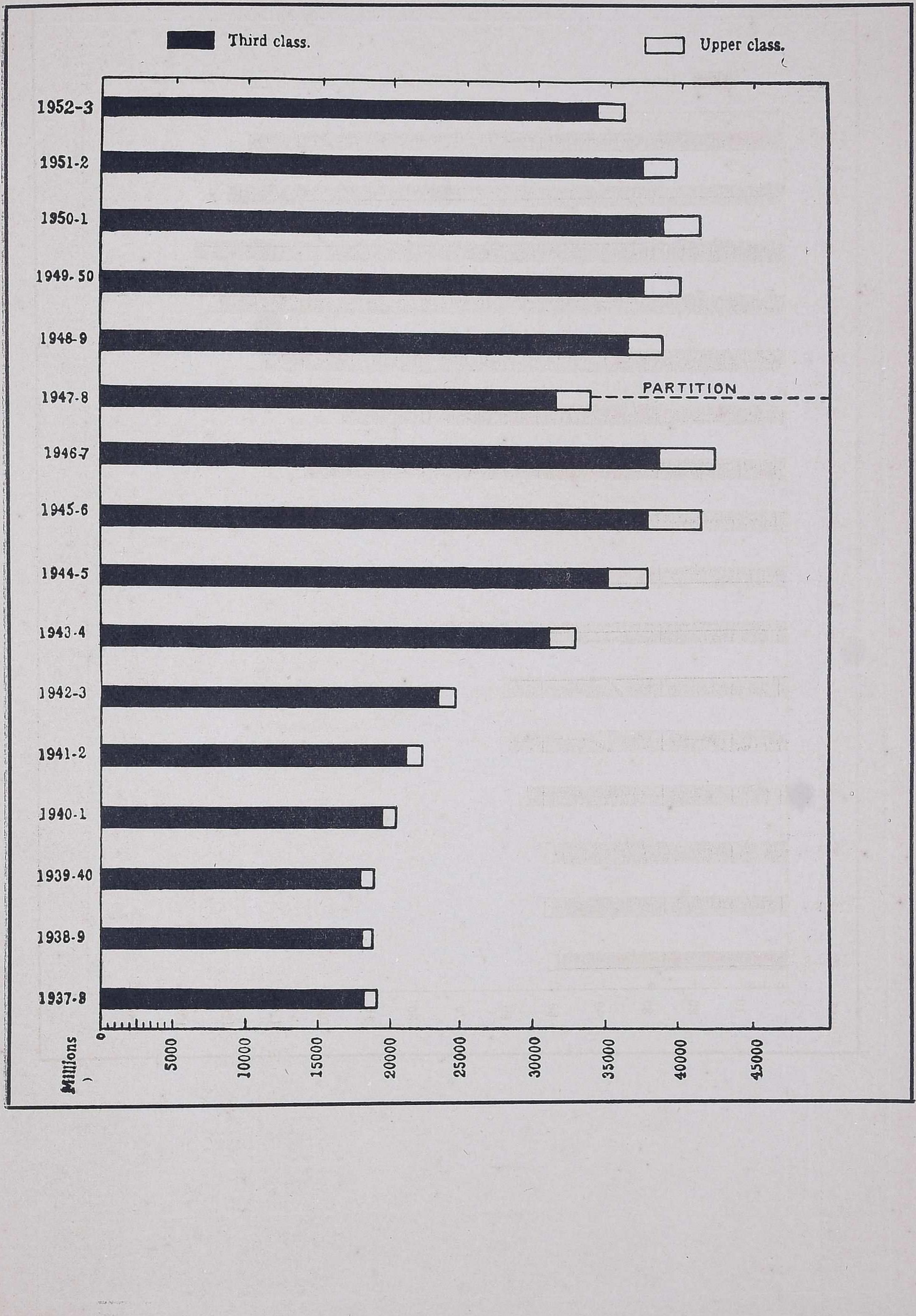
I—TOTAL CAPITAL AT CHARGE, TOTAL GROSS EARNINGS AND TOTAL WORKING EXPENSES OF INDIAN GOVERNMENT RAILWAY LINES



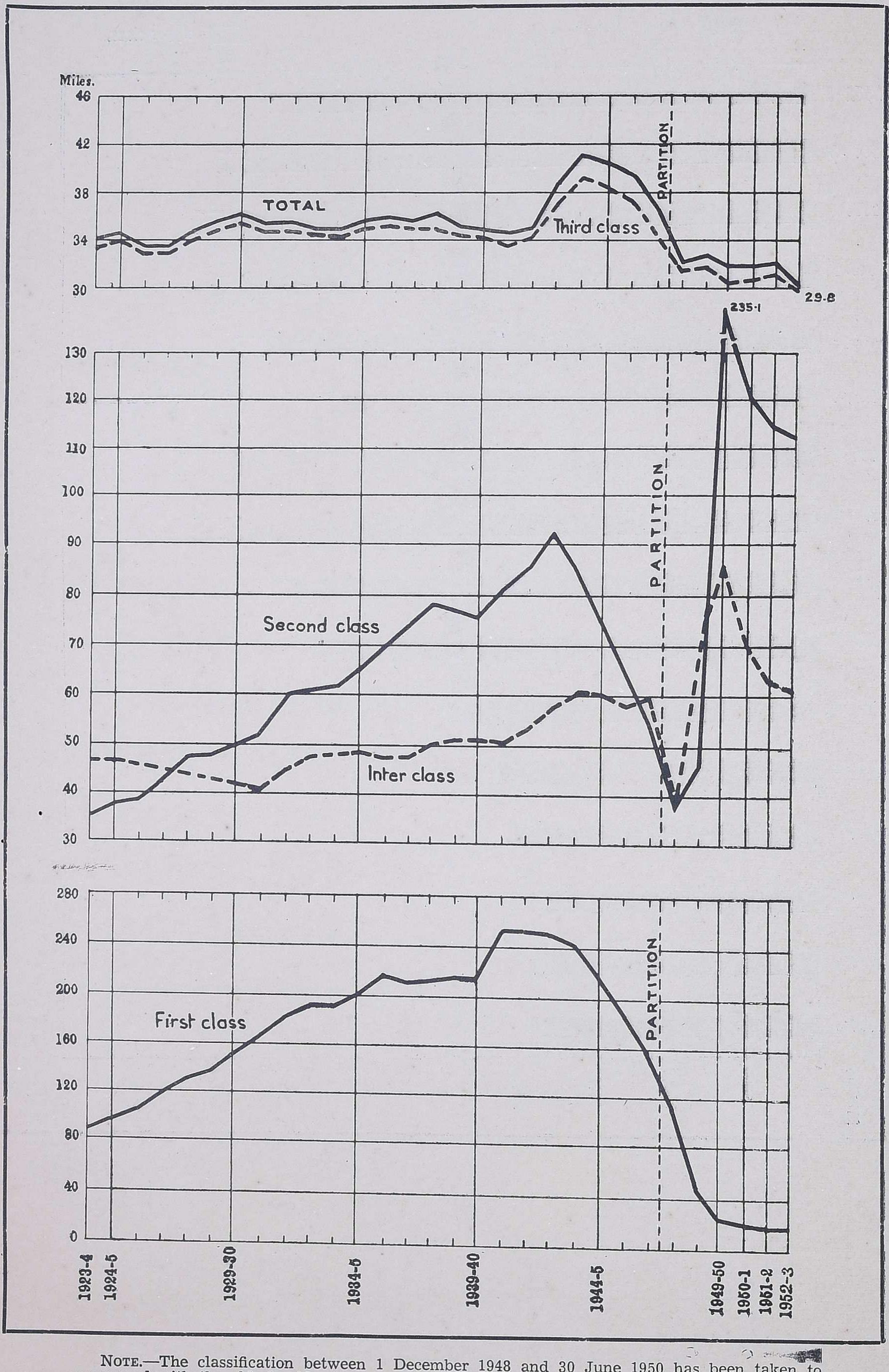
II—NUMBER OF PASSENGERS CARRIED
ALL INDIAN RAILWAYS



III—NUMBER OF PASSENGER MILES ALL INDIAN RAILWAYS



IV—AVERAGE MILES A PASSENGER WAS CARRIED ALL INDIAN RAILWAYS

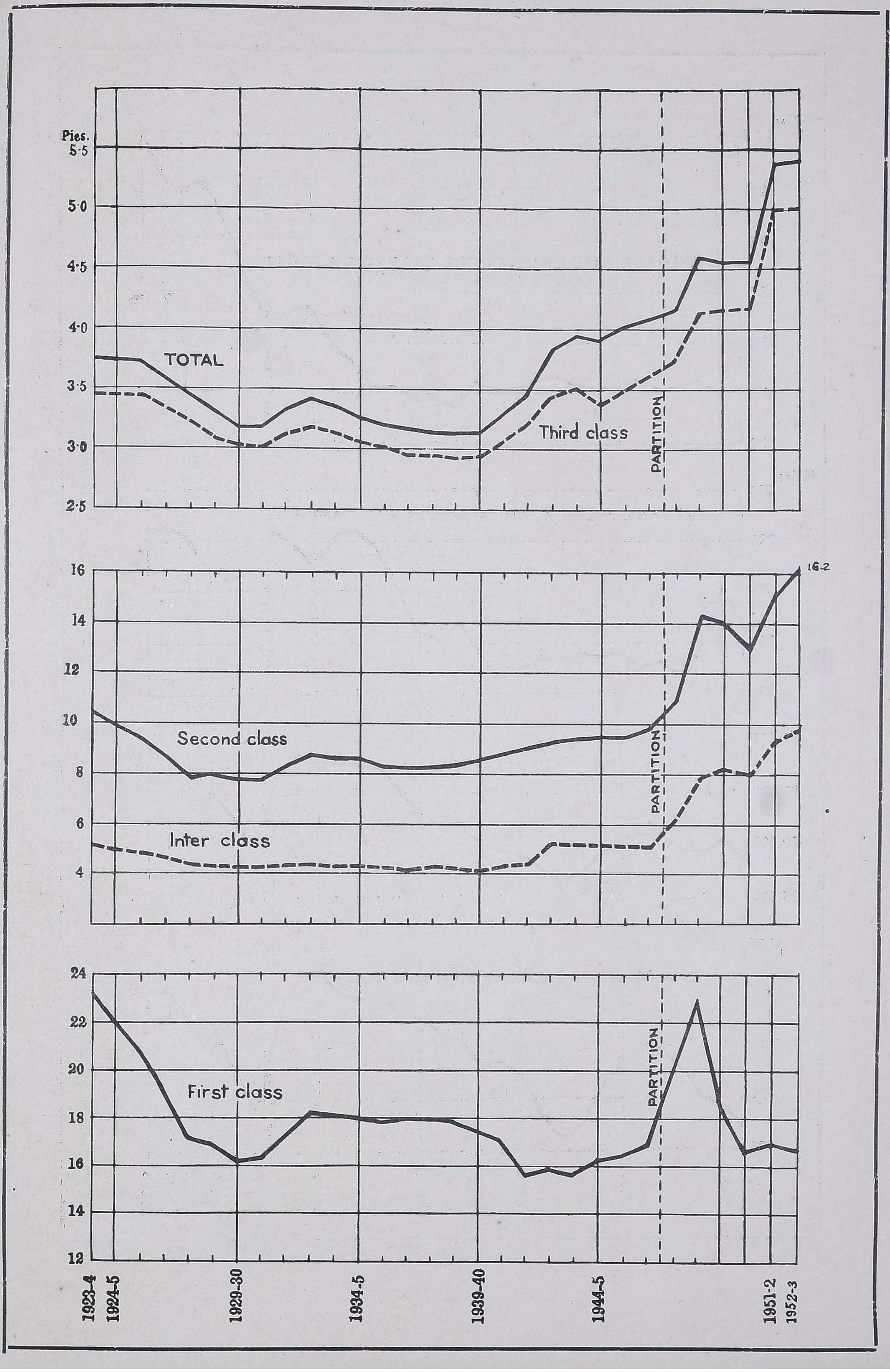


NOTE.—The classification between 1 December 1948 and 30 June 1950 has been taken to correspond with the old classification as under:—

Class I	=First class
Class II Special	=Second class
Class II	=Inter class
Class III	=Third class

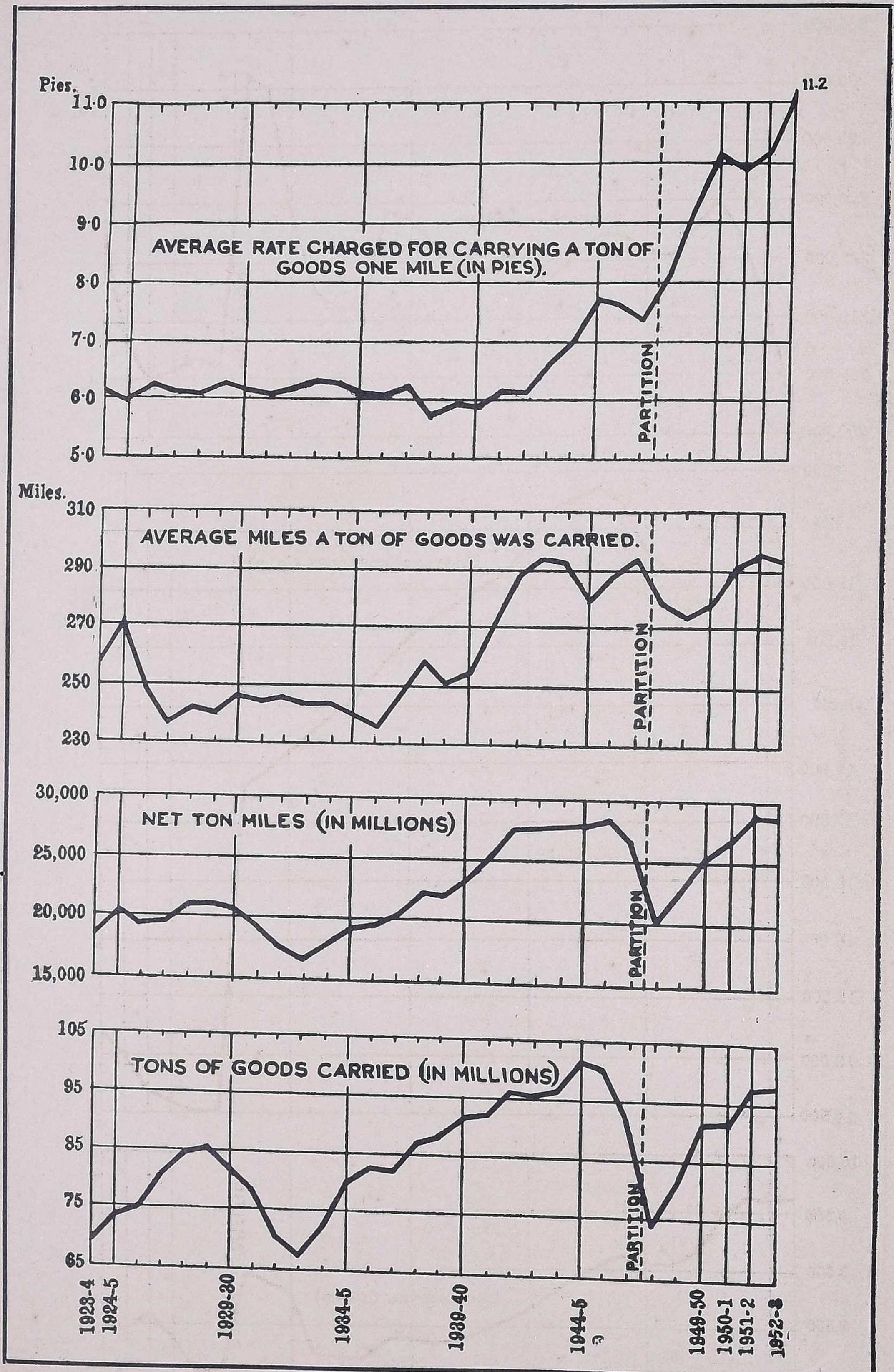
V—AVERAGE RATE CHARGED PER PASSENGER PER MILE

ALL INDIAN RAILWAYS

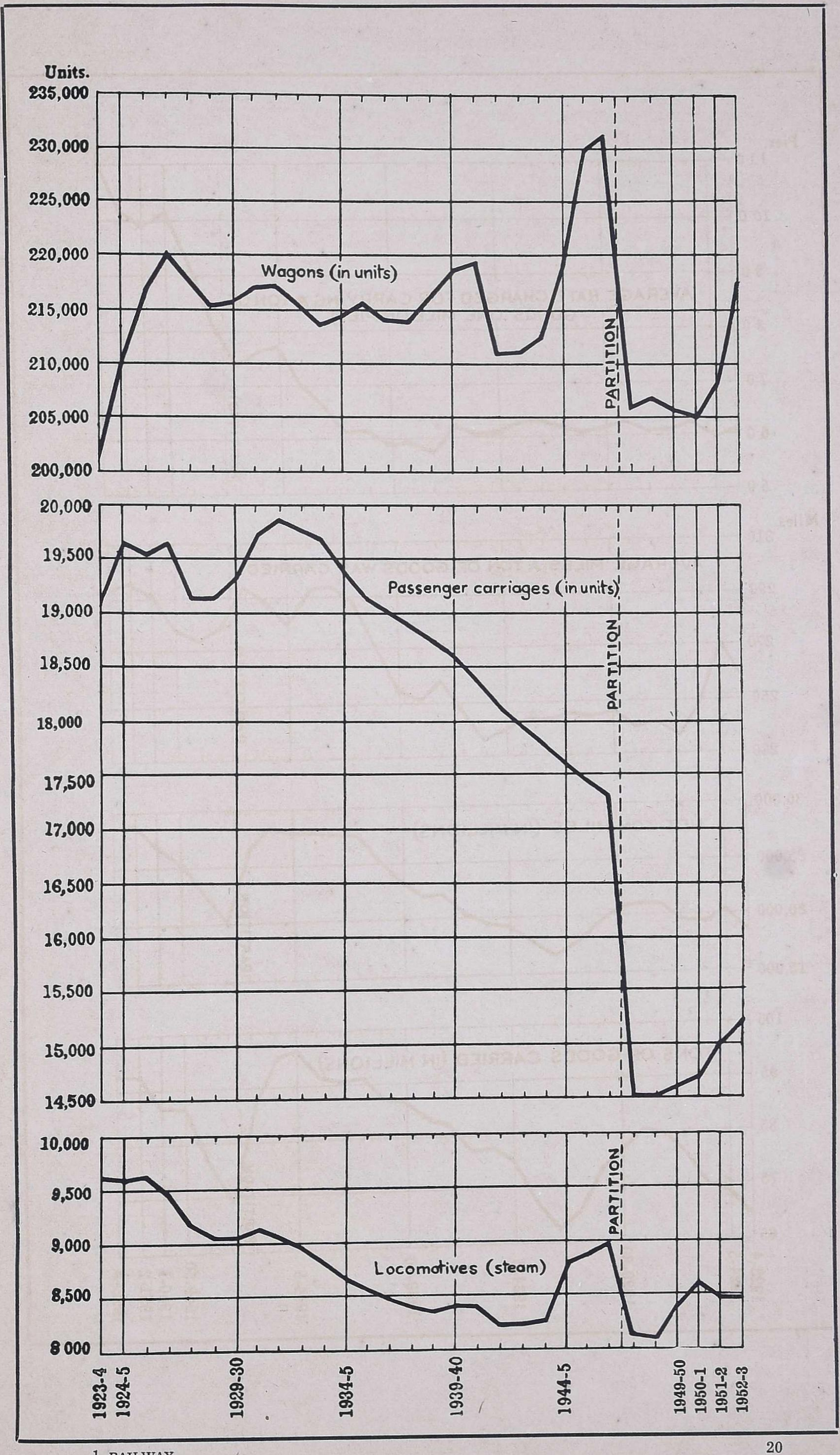


VI—AVERAGE RATE, AVERAGE LEAD, NET TON MILES, TONS CARRIED

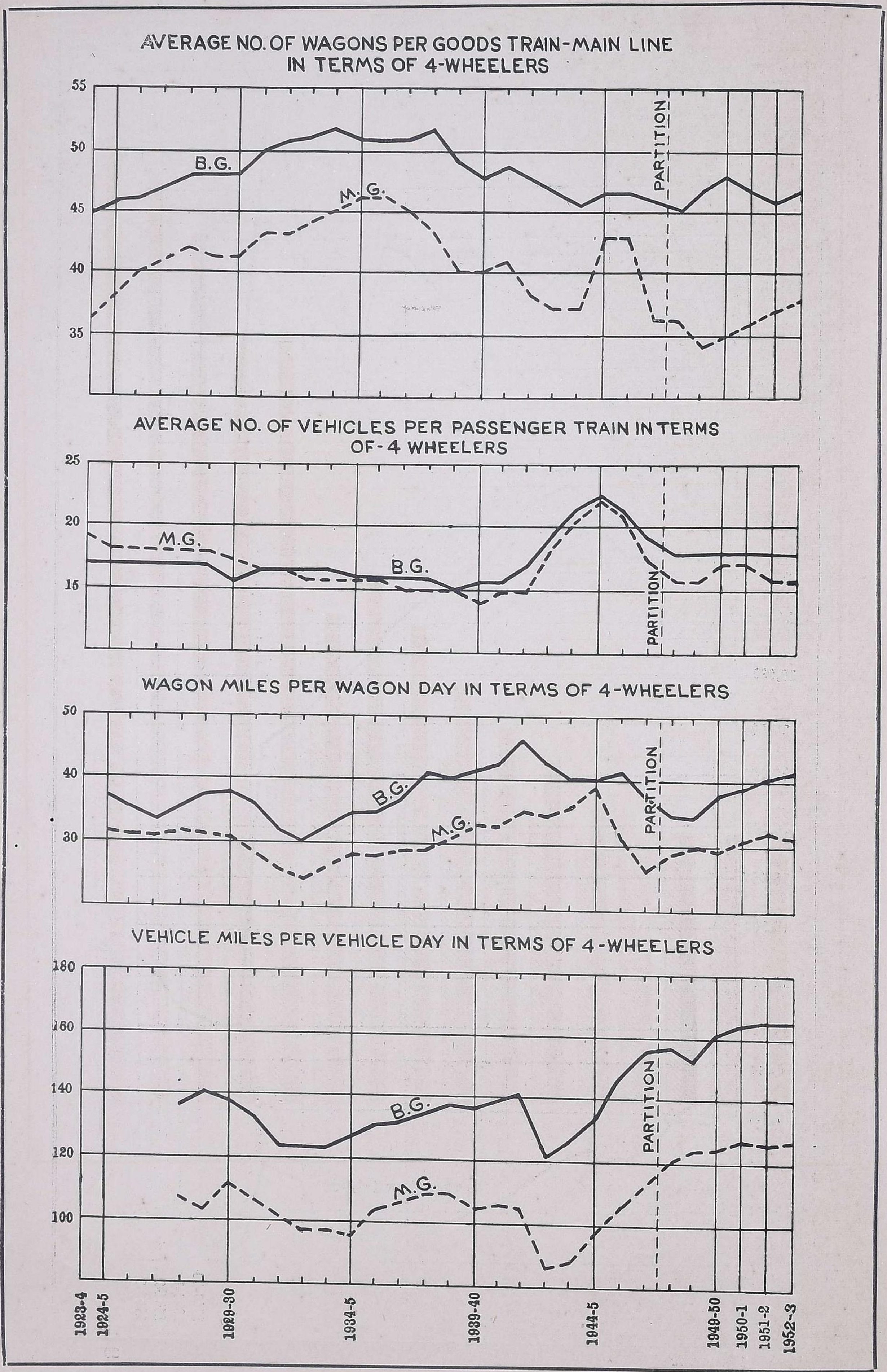
ALL INDIAN RAILWAYS



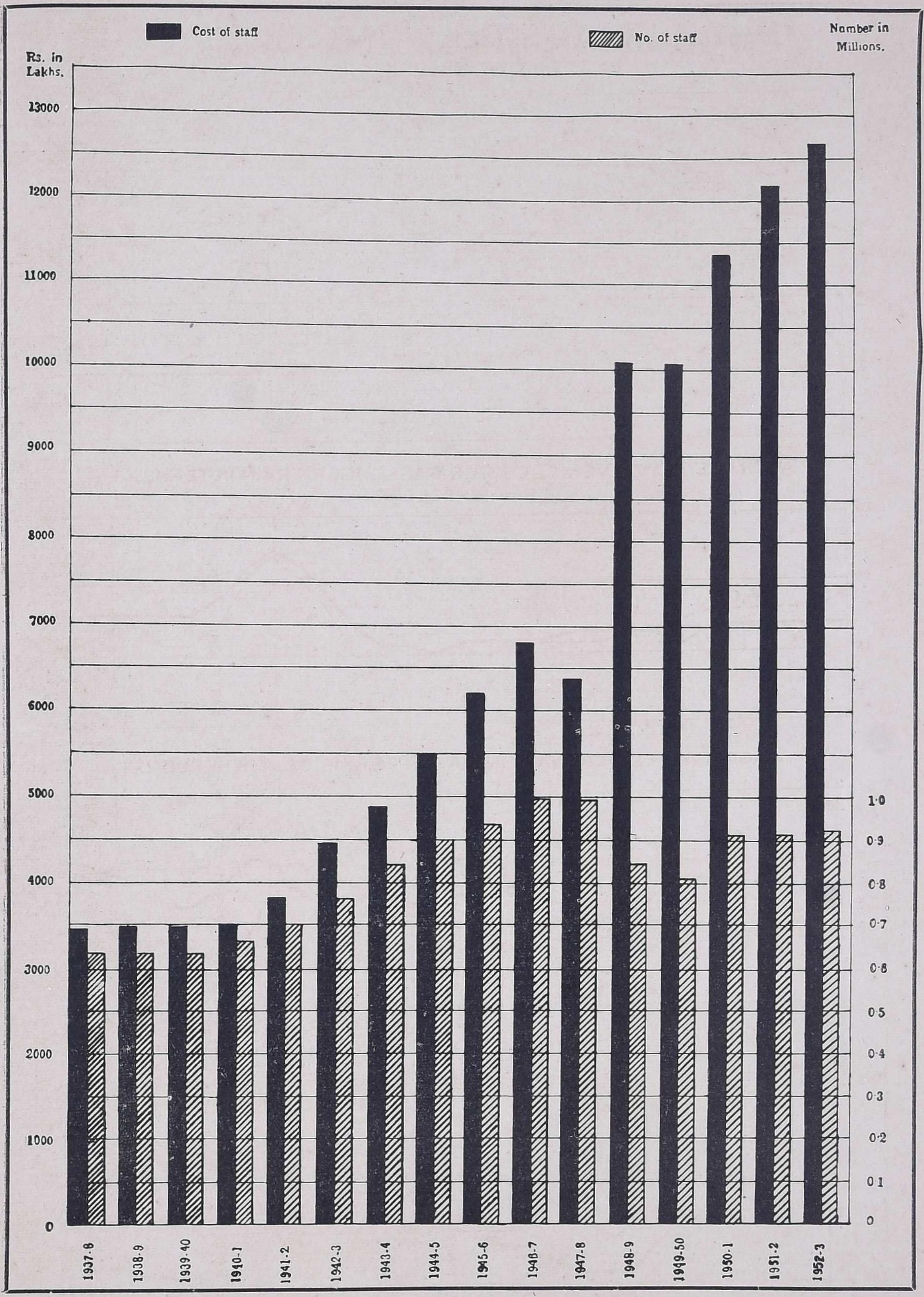
VII—ROLLING-STOCK IN SERVICE ALL INDIAN RAILWAYS



VIII—WAGON AND VEHICLE UTILIZATION, GOVERNMENT RAILWAYS



IX—TOTAL NUMBER AND COST OF STAFF INDIAN GOVERNMENT RAILWAYS



APPENDIX D

Railway Administrations in India alphabetically arranged by Classes showing the working agencies, ownership, and route mileage open on 31 March 1953

Indian Railway systems have been classified under two classes for statistical purposes :-

Government Railways
Non-Government Railways.

Railway system		Lines comprised in the system			Owned by
Name	Worked by	Name	Gauge	Route mileage	
		GOVERNMENT RAILWAYS			
(1) Central	Indian Government	(a) Central	5′-6″	4,091	Indian Government.
		(b) Central	3′-3⅜″	772	Do.
		(c) Central	2′-6″	117	Do.
		(d) Ellichpur-Yeotmal	2′-6″	118	Branch Line Company under rebate terms.
		(e) Pulgaon-Arvi	2′-6″	22	Do.
		(f) Central	2′-0″	307	Indian Government.
(2) Eastern	Indian Government	(a) Eastern	5′-6″	733	Do.
		(b) Eastern	2′-6″	942	Do.
(3) Northern	Indian Government	(a) Northern	5′-6″	3,846	Do.
		(b) Rupar-Nangal*	5′-6″	34	Do.
		(c) Mukerian-Pathankot	5′-6″	26	Do.
		(d) Northern	3′-3⅜″	2,006	Do.
		(e) Kalka-Simla	2′-6″	60	Do.
		(f) Kangra Valley	2′-6″	68	Do.
(4) North Eastern	Indian Government	(a) North-Eastern†	5′-6″	2	Do.
		(b) North-Eastern	3′-3⅜″	4,652	Do.
		(c) Chaparmukh-Silghat§	3′-3⅜″	51	Branch Line Company under guarantee terms.
		(d) Katakhal-Lalabazar§	3′-3⅜″	23	Do.
		(e) Tejpur-Balipara	2′-6″	20	Indian Government.
		(f) Darjeeling-Himalayan	2′-0″	52	Do.
(5) Southern	Indian Government	(a) Southern	5′-6″	1,738	Do.
		(b) Cochin Harbour Extension	5′-6″	4	Cochin Harbour Authority.
		(c) Tenali-Repalle	5′-6″	21	District Board, Guntur
		(d) Southern	3′-3⅜″	4,044	Indian Government.
		(e) Alnavar-Dandeli (Provincial)	3′-3⅜″	19	Government of Bombay.

* Jointly owned by the Government of India and the Government of the Punjab.

† This line is laid between Haldibari and Pakistan Border for direct communication with Pakistan.

§ This line is guaranteed by the Government of India and also received a subsidy from the Assam Government for the first ten years.

Railway system — Name	Railway system — Worked by	Lines comprised in the system — Name	Gauge	Route mileage	Owned by
		(f) West of India Portuguese	3′-3⅜″	51	West of India Portuguese Railway Company.
		(g) Peralam-Karaikkal	3′-3⅜″	15	French Government.
		(h) Pondicherry	3′-3⅜″	8	Pondicherry Railway Company.
		(i) Nanjangud Town-Chamarajanagar	3′-3⅜″	22	District Boards, Mysore and Mandya.
		(j) Southern	2′-6″	102	Indian Government.
(6) Western	Indian Government	(a) Western	5′-6″	1,260	Do.
		(b) Western	3′-3⅜″	3,518	Do.
		(c) Western	2′-6″	773	Do.
		NON-GOVERNMENT RAILWAYS			
(1) Ahmadpur-Katwa	Ahmadpur-Katwa Railway Co.	Ahmadpur-Katwa*	2′-6″	32	Branch Line Company under Guarantee terms.
(2) Arrah-Sasaram Light	Arrah-Sasaram Light Railway Co.	Arrah-Sasaram Light	2′-6″	65	Company subsidized by District Board of Shahabad.
(3) Bankura-Damodar River	Bankura-Damodar River Railway Co.	Bankura-Damodar River*	2′-6″	60	Branch Line Company under guarantee terms.
(4) Barasat-Basirhat Light	Barasat-Basirhat Light Railway Co.	Barasat-Basirhat Light	2′-6″	52	Company subsidized by District Board of 24 Parganas.
(5) Barsi Light	Barsi Light Railway Co.	Barsi Light	2′-6″	203	Unassisted Company.
(6) Bengal Provincial	Bengal Provincial Railway Co.	(a) Bengal Provincial (b) Dasghara-Jamalpurganj*	2′-6″ 2′-6″	33 8	Unassisted Company. Branch Line Company under guarantee terms.
(7) Bukhtiarpur-Bihar Light	District Board, Patna	Bukhtiarpur-Bihar Light	2′-6″	33	District Board of Patna.
(8) Burdwan-Katwa	Burdwan-Katwa Railway Co.	Burdwan-Katwa*	2′-6″	32	Branch Line Company under guarantee terms.
(9) Dehri-Rohtas Light	Dehri-Rohtas Light Railway Co.	Dehri-Rohtas Light	2′-6″	24	Company subsidized by District Board of Shahabad.
(10) Futwah-Islampur	Futwah-Islampur Light Railway Co.	Futwah-Islampur*	2′-6″	27	Branch Line Company under guarantee terms.
(11) Howrah-Amta Light	Howrah-Amta Light Railway Co.	Howrah-Amta Light	2′-0″	44	Company subsidized by District Boards of Howrah and Hooghly and Municipality of Howrah.
(12) Howrah-Sheakhala Light	Howrah-Sheakhala Light Railway Co.	Howrah-Sheakhala Light	2′-0″	20	Do.
(13) Jagadhri Light	Jagadhri Light Railway Co.	Jagadhri Light	2′-0″	3	Unassisted Company.
(14) Kalighat-Falta	Kalighat-Falta Railway Co.	Kalighat-Falta*	2′-6″	26	Branch Line Company under guarantee terms.
(15) Shahdara (Delhi) Saharanpur Light	Shahdara (Delhi) Saharapur Light Railway Co.	Shahdara (Delhi) Saharanpur Light†	2′-6″	93	Company subsidized by the Government of India.

* Guaranteed by the Government of India.
† Receives land only from Government.

APPENDIX E

Principal Statistics of Railway Working in Selected Foreign Countries

BRITISH RAILWAYS, 1952*

Capital†	£1,446,331,571
Route mileage	19,276
Total Gross Receipts	£403,357,882
Expenses	£363,756,185
Net traffic receipts	£39,601,697
Operating ratio	90%
Passenger journeys originating (in thousands)	988,997
Passenger miles estimated (millions)	20,690
Passenger earnings (in thousands)	£111,905
Freight train traffic originating tons (in thousands)	284,916
Estimated net ton miles (in thousands)	22,391,143
Freight earnings (in thousands)	£250,537
Train miles—	
Coaching (in thousands)	235,514
Freight (in thousands)	140,884
Number of employees at end of year (including collection and delivery services)	601,381

* *British Transport Commission Financial and Statistical Accounts 1952.*

† Capital represents the gross book value of rolling-stock, vehicles, plant and equipment, lands, buildings, permanent way, etc.

U. S. CLASS I RAILWAYS, 1952*

Investment in railway property used in transportation service (in thousands)	$31,558,888
Route miles†	225,677
Total operating revenue (in thousands)	$10,580,762
Total operating expenses (in thousands)	$8,052,518
Operating ratio	76·11
Revenue passengers carried (in thousands)	469,537
Revenue passenger miles (in thousands)	34,009,986
Passenger revenue (in thousands)	$906,185
Revenue tons originated† (in thousands)	1,382,604
Revenue ton miles‡ (in thousands)	614,753,676
Freight revenue (in thousands)	$8,788,635
Train miles—	
Passenger (in thousands)	344,468
Freight (in thousands)	502,891
Number of employees (in thousands)	1,227

* *Statistics of Railways of Class I, United States, calendar years 1939 to 1952, Statistical summary No. 37, October 1953, Association of American Rail Roads, Bureau of Railway Economics.*

† Average miles represented by income account.

‡ Short tons of 2,000 lbs.

CANADIAN RAILWAYS, 1952

	Canadian National Railways*	Canadian Pacific Railways†
Capital‡	$2,436,837,772	$1,532,182,785
Average mileage of road operated	24,190	17,017
Total operating revenues	$675,219,415	$457,808,969
Total operating expenses	$634,852,915	$428,878,189
Net operating revenues	$40,366,900	$28,930,780
Operating ratio	94·02	93·7
Passengers carried	18,832,815	9,868,075
Passenger miles	1,635,201,983	1,377,309,000
Passenger revenue	$48,466,128	$38,958,376
Tons carried (Revenue freight)	90,053,919	61,504,788
Net ton miles of freight (Revenue)	38,430,494,637	28,942,979,000
Freight revenue	$536,723,241	$376,858,445
Train miles—		
Passenger service	25,533,678	20,610,100
Freight service	49,541,512	37,493,210
Number of employees	127,930	95,695

* *Annual Report, Canadian National Railways, 1952.*

† *Canadian Pacific Railway Company Annual Report, 1952.*

‡ Represents Property Investment account at the end of the year 1952.

SOUTH AFRICAN RAILWAYS, 1951-2*

Total capital expenditure		£295,522,136
Mileage of open lines as at 31 March 1951	Miles	14,009†
Total earnings		£100,623,226
Total working expenditure (including depreciation)		£65,826,098
Surplus of earnings over gross working expenditure		£34,797,128
Operating ratio		65·42%
Passenger journeys		261,820,463
Earnings—Passenger		£15,340,400
Total tonnage of revenue earnings commodities railed (excluding livestock)	Tons‡	56,475,981
Earnings—Goods, coal and livestock		£75,614,863
Total train miles run		85,937,137
Total staff at 31 March 1951		186,827

* *Report of the General Manager of Railways and Harbours for the year ended 31 March 1952.*

† Includes 580 miles of Rhodesia Railways.

‡ Short ton of 2,000 lbs.

AUSTRALIAN RAILWAYS

—	New South Wales Railways 1951-2*	Victorian Railways 1951-2*	Queensland Railways† 1951-2*	Western Australian Government Railways 1951-2 (a)
Capital	£217,621,764	£1,024,176,532	£59,809,134	£19,256,385(b)
Miles open for traffic on 30 June 1951	6,113	4,687	6,491	4,713
Earnings	£68,909,720	£26,089,432	£22,523,110	£9,163,532
Working expenses	£64,020,193	£29,611,867‖	£24,056,520	£10,601,917
Net earnings	£4,889,527	£—3,522,435	£—1,533,410	£—1,438,385
Operating ratio	92·90	113·50	106·81	115·69
Passenger journeys	268,167,596	165,130,762	34,840,109	10,536,195
No. of passengers carried one mile	Not available	1,780,854,228	Not available	Not available
Passenger revenue	£17,222,019§	£8,116,233	£2,914,892	Not available
Tonnage of goods and livestock (Paying)	18,527,732¶	9,204,510	6,456,764	3,062,641
No. of tons carried one mile (Paying)	Not available	1,280,190,847	1,265,664,425	469,747,561
Total goods revenue (including livestock)	£43,361,250	£13,461,991	£17,886,609	Not available
Train mileage—				
Passenger	(Statistics discontinued)	11,195,790	6,915,689	Not available
Goods	Do.	5,777,011	11,505,777	Not available
No. of staff	60,091	27,701	27,610	12,049

*Annual Reports of respective Railways for the year ending 30 June 1952.

†Exclusive of Uniform Gauge Railway.

‡Includes £30,000,000 written down under Railways (Finance Adjustment) Act, 1936.

§Represents total coaching earnings.

‖Excludes expenditure charged to special funds.

¶Does not include livestock tonnage.

(a) *Australia today 1953.*

(b) Figures for 1950-1 shown in the Annual Report of the Railway for the year ending 30 June 1951.

Books and Technical Papers published by the Railway Board.

BOOK

(1) Report by the Railway Board on Indian Railways. Published yearly. Price: Volume I—Report, Rs. 6-6-0 or 10*sh.* Volume II—Statistics, Rs. 10-12-0 or 17*sh.* (1951-2).

(2) Indian Railways, 1951-2. Published yearly. Price: Rs. 2-0-0.

(3) Classified List of Gazetted Establishment of Indian Railways corrected up to 30 June 1953. Rs. 8-6-0 or 13*sh.* 6*d.*

(4) History of Indian Railways, constructed and in progress corrected up to 31 March 1945. Published sexennially. Price: Rs. 9-2-0 or 14*sh.* 6*d.*

TECHNICAL PAPERS

(5) Over 327 papers have been published by the Technical Section of the Railway Board's Office. The papers comprise:

(*a*) Original descriptions of railway works and studies of railway problems in India and elsewhere

(*b*) Reprints of articles from foreign engineering magazines

(*c*) Reprints or abstracts of reports received by the Government of India on subjects connected with railways

A complete list of the papers can be obtained *gratis* by Railways from the Director, Research, Railway Testing and Research Centre, Alambagh, Lucknow. A few of the more important Technical papers are mentioned below:—

Technical Paper.	*Name.*	*Author*
No. 72.	The design of well foundation for bridges	(Compiled.)
,, 148.	Statistics of Railway working expenditure	G. DEUCHARS
,, 153.	River training and control on the guide bank system	F. J. E. SPRING
,, 215.	The Hardinge Bridge over the Ganges Lower at Sara	SIR ROBERT GALES
,, 219.	Technical education in relation to railways in America	H. L. COLE
,, 239.	The Central Control systems for the scheduling of operations in locomotive repairs workshops in England	H. H. SAUNDERS
,, 242.	Railway Statistics and the Operating Officer	MAJOR F. H. BUDDEN
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,, 244.	Sleeper spacing and the effect of the new Permissible Axle-loads	A. F. HARVEY
,, 245.	Report of the Indian Railway Bridge Committee on track stresses	
,, 247.	1st and 2nd interim reports of the Indian Railway Bridge Committee on Impact and Revision of the Bridge rules	
,, 249.	Operating Statistics and the Divisional Officer	MAJOR F. H. BUDDEN
,, 250.	Axle-loads, Wheel Diameter and railheads dimensions	
,, 251.	A. R. E. and maintenance of Way Association's Impact tests on Railway Bridges	(Reprinted.)
	Description of the Planning, Progress, Coaling and Engine Repairs, Schedule System introduced to the G. I. P. Railway Loco. Shops at Parel	F. G. S. MARTIN
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,, 259.	The estimation of Passenger earnings on new projects	A. LINES
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,, 262.	Note on steps to be taken to permit of running the future large vehicles on Broad Gauge Railways, 1927	A. I. SLIEGH
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,, 275.	An Enquiry into the Preparation of Periodic Financial Returns on the Railways of Great Britain, Egypt, and Palestine, 1929	MAJOR WAGSTAFF

Technical Paper.	Name.	Author.
No. 276.	Investigation into the Strength of Rail joints	H. HOWE AND L. H. SWAIN
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,, 278.	Notes on Tube Railway Construction	H. G. SALMOND
,, 279.	Report on Track Practice on American and Canadian Railways	A. F. HARVEY
,, 280.	The Installation of a Production system in the Locomotive Workshops at Moghalpura	A. E. HOWELL
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,, 282.	Note on "Fridera" a composition for reconditioning abraised spike holes in Railway Sleepers	S. KRISHNA AND T. P. GHOSE
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,, 284.	Notes on progressive system of wagon repairs as introduced in N. W. R. shops at Moghalpura	B. S. SINDHU
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,, 286.	Stresses in Fishplates for 90 lbs. Rails (with conclusions affecting the design of standard rail and fishplate sections)	E. A. SIMS
,, 287.	Report on Oil Burners and Wicks for Signal Lamps	H. E. COX
,, 288.	G. I. P. Railway Dynamometer Car, Report No. 11, Train Resistance	C. W. CLARKE
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,, 290.	The Indian Railway Rates' Structure. The case for its simplification. Its existing shortcomings and suggested principles as a basis for its revision	A. W. BECKETT
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Technical Paper.	*Name.*	*Author.*
No. 313.	Appoximate Method for Calculating the Deflection of Beams	D. S. DESAI
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